PREVENTION '84/'85

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service

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Office of Disease Prevention and Health Promotion

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Preface

The Biblical injunction "Physician, heal thyself" was written centuries ago when the practice of medicine was in its infancy. As today's *medical* bibles are written, a parallel theme has moved to the fore: "Americans, heal thyselves."

We have learned that diet, exercise, and proper rest-not the "apple a day" of the famous rhyme-are key factors in "keeping the doctor away."

As a Nation, we have moved within striking distance of our 1990 goal of reduced mortality at *every life stage.*

This document charts and catalogues a host of Federal activities which are helping us attain that goal. Health promotion-health protection-disease prevention are the bedrock concern of many of the agencies of the Department of Health and Human Services. They are the basis for such diverse initiatives as the Health Care Financing Administration's Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) Program; the child health and immunization initiative; elderly feeding programs in the Office of Human Development Services; the Health Promotion Initiative for the Elderly-a collaborative effort of Public Health Service and other Departmental offices; and a rich variety of other prevention programs—all documented and described in this volume. Prevention activities are also the target of other Federal agency activities not typically associated with that subject-for instance, the Department of Transportation, the Department of Agriculture, and the Department of Labor. Their contributions accent and accelerate the prevention effort in areas that might otherwise be neglected.

We have valued allies on this health battlefield; our advances are due in no small measure to the involvement and zeal of local and State governments; community and national voluntary organizations; business, labor, and industry; school health educators and administrators; health care practitioners; and other private sector groups. The trumpet we have sounded from Washington has been reinforced and echoed by these groups "from sea to shining sea."

As the evidence mounts on the direct correlation between our own choices and the prospects for a healthy life at all ages, more and more Americans have come to realize that the Nation's health destiny is not an abstraction-that it is tied to the choices each American makes *every single day of every single week, every month, and every year.*

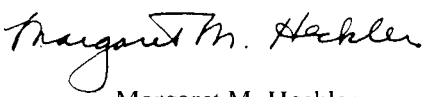
The startling decline in the cardiovascular disease death rate during the last decade graphically dramatizes the point: It is no accident that during that time, in addition to improved medical technology, significant strides have been made in the public's knowledge and grasp of the relationship between high blood pressure and heart trouble. And between high blood pressure and salt (sodium). Nor is it an accident that as the proportion of adults who understood that smoking is one of the major risk factors for heart disease rose, from 1964 to 1980 *the proportion of adult smokers declined.*

Americans *are* healing themselves!

Informed choices and wise nutritional decisions have a positive impact on the prospects for staying healthy. But our choices are not just about our personal lifestyles; the environments in which we live also count. Exercise and nutrition should be partnered by the protective measures we as individuals and as a Nation take to protect and prolong life. Whether preserving our safety and health or protecting ourselves from hazardous environments or substances, measures of health *protection* comprise a crucial component of achieving and maintaining healthy, safe, and active lives.

We still have much to learn. In some areas our science base is still emerging and its implications are not fully explored. In other areas we already have a strong consensus of scientific opinion. A prime government role is "spreading the word"; we are the teacher on whom the American public depends.

Yet without the private sector's energetic participation in the development and implementation of a prevention ethic we will fall far short of optimum success. It is by mobilizing both our knowledge and a public/private sector implementation partnership that we will create a collective strength which will ensure a healthier and more productive people.



Margaret M. Heckler
Secretary of Health and Human Services

Foreword

The process of setting and implementing national health goals has created a good name for prevention. It's no longer just a concept in the minds of a few people or chapters in a report issued by the Department of Health and Human Services./Prevention has taken root. The warning labels on cigarette packs are more explicit now than ever before, 49 States and the District of Columbia have passed legislation requiring the use of child safety seats, and already several States have raised the legal drinking age in the fight against teenage drunk driving and alcohol abuse.

These are but a few of the more obvious indicators of the growing involvement across the country of concerned citizens who want to take control of their health destinies-to make changes for the promotion and protection of good health and the prevention of injury and disease. This caring and determination are the bases of a strong public-private partnership for health.

The partnership is responsible for designing a national health promotion strategy that already has begun to return dividends in the form of reduced mortality at every life stage. It's a strong strategy because it builds on the energy and commitment of individuals working in their communities, bolstered by the resources of voluntary organizations, health professionals, organized labor, community leaders, business and industry, educators, and others.

As we approach 1990, the target date for many of the national health promotion and disease prevention objectives, we can renew our goals by reexamining our points of progress and our points of stress. We have to be concerned that three of the five leading causes of potential years of life lost are homicide, suicide, and accidental injury. We need to assess what tailored strategies might put a halt to these disturbing trends. Likewise, we need to remind the public of the seriousness of the suffering and long-term consequences of sexually transmitted diseases, for today there are more STD organisms and syndromes than ever before. Violence and child abuse, abuse of alcohol and drugs, and the ill effects of unemployment and other economic stresses are other sources of concern that touch each of us.

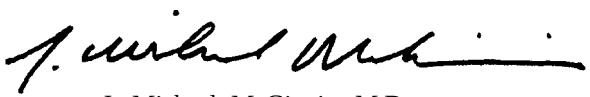
Yet the list of positive health trends and changes gives us every reason to be hopeful about our national prognosis. Between 1972 and 1982 the age-adjusted death rate for strokes dropped by more than 42 percent, and for heart disease, by over 27 percent. Substantial gains have been achieved in the survival of infants and children, and it's reasonable to expect that by 1990 at least 90 percent of all children will have completed their basic immunization series by age 2. Over the past decade there has been a 30 to 45 percent increase in the number of school children completely free of caries. All indications are that fitness and exercise are an interest of a growing number of Americans, and our knowledge of the relation between nutrition and health continues to expand. Progress in identifying and testing potentially toxic substances has been substantial, accompanied by ever more sophisticated technologies.

Assessing our progress-facing our dilemmas as well as our successes-gives purpose to our commitment.' This document provides a look at how Federal activities are contributing to the commitment. 'Chapter 1 features a close-up look at the area of health protection, which encompasses toxic agent and radiation control, occupational safety and health, accident prevention and injury control, fluoridation and dental health, and surveillance and control of infectious diseases. We have in the area of health protection the opportunity to see how crucial the building of strong data

bases and surveillance systems is to our understanding of how we can best protect our health. It's also an area where we can see the impact on prevention of the latest developments in biotechnology.

In Chapter 2 of this document a series of charts are used to track a variety of health status trends. Chapter 3 focuses on selected prevention activities of the Department of Health and Human Services and other Federal agencies, while the final chapter presents an inventory of DHHS health promotion and disease prevention programs by department and priority area.

Research, evaluation, and information dissemination shape our national strategy for health; application of our knowledge about specific risk factors brings the strategy to life; and involvement by Americans from all sectors of society gives meaning to the strategy. Each of us as individuals and as leaders of our communities can choose prevention-protecting and promoting health and preventing disease-as a way of life.



J. Michael McGinnis, M.D.
Deputy Assistant Secretary for Health
(Disease Prevention and Health Promotion)

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Acronyms and Abbreviations

The following list of acronyms and abbreviations is provided as a quick index of terms and of Federal agencies, departments, offices, and programs that are mentioned more than once in this publication. Parenthetical acronyms and abbreviations identify the parent agency.

ADAMHA	Alcohol, Drug Abuse, and Mental Health Administration
AHEC	Area Health Education Center
AID	Agency for International Development
AIDS	Acquired Immunodeficiency Syndrome
AoA	Administration on Aging
ATPM-SREPCIM	Association of Teachers of Preventive Medicine-Society for Research and Education in Primary Care Internal Medicine
ATSDR	Agency for Toxic Substance and Disease Registry (CDC)
BATF	Bureau of Alcohol, Tobacco, and Firearms (Department of Treasury)
BHCDA	Bureau of Health Care Delivery and Assistance (HRSA)
BHMORD	Bureau of Health Maintenance Organizations and Resources Development (HRSA)
BHPr	Bureau of Health Professions (HRSA)
CCCD	Combatting Childhood Communicable Diseases
CDC	Centers for Disease Control
CDRH	Center for Devices and Radiological Health (FDA)
CEH	Center for Environmental Health (CDC)
CHC	community health centers
CHPE	Center for Health Promotion and Education (CDC)
CID	Center for Infectious Diseases (CDC)
COLD	chronic obstructive lung disease
COPE	Committee on Patient Education (Center for Drugs and Biologics, FDA)
CPDT	Center for Professional Development and Training (CDC)
CPPT	Coronary Primary Prevention Trial
CPS	Center for Prevention Services (CDC)
CPSC	Consumer Product Safety Commission
DFEOH	Division of Federal Employee Occupational Health (BHCDA, HRSA)
DHE	Division of Health Education (CHPE, CDC)
DHHS	Department of Health and Human Services
DIRLINE	Directory of Information Resources Online
DMCH	Division of Maternal and Child Health (BHCDA, HRSA)
DOE	Department of Education
DO1	Department of Interior
DOL	Department of Labor
DOT	Department of Transportation
DRR	Division of Research Resources (NIH)
EIS	Epidemic Intelligence Service (EPO, CDC)
EPA	Environmental Protection Agency
EPI	Expanded Programme on Immunization
EPO	Epidemiology Program Office (CDC)
EPSDT	Early and Periodic Screening, Diagnosis, and Treatment
FACE	Fatal Accident Circumstances and Epidemiology
FAS	fetal alcohol syndrome
FDA	Food and Drug Administration
FIT	Fitness Implementation Teams
FTC	Federal Trade Commission
GEIS	Global Epidemic Investigation System
HCFA	Health Care Financing Administration
HHANES	Hispanic Health and Nutrition Examination Survey
HMO	health maintenance organization
HRA	health risk appraisal
HRSA	Health Resources and Services Administration
HSA	Health Systems Agency (BHMORD, HRSA)
IDL	intermediate-density lipoprotein
IEPLG	Interagency Education Program Liaison Group
IHPO	International Health Program Office (CDC)
IHS	Indian Health Service (HRSA)
LDL	low-density lipoprotein
LPO	Laboratory Program Office (CDC)
MMWR	*Morbidity and Mortality Weekly Report* (EPO, CDC)
MSHA	Mine Safety and Health Administration (DOL)
NCALI	National Clearinghouse for Alcohol Information (NIAAA, ADAMHA)
NCCAN	National Center on Child Abuse and Neglect
NCHS	National Center for Health Statistics
NCHSR/HCTA	National Center for Health Services

	Research and Health Care Technology Assessment
NCI	National Cancer Institute (NIH)
NCPIE	National Council on Patient Information and Education
NCTR	National Center for Toxicological Research (FDA)
NDN	National Diffusion Network
NEJ	National Eye Institute (NJH)
NHANES	National Health and Nutrition Examination Survey
NHIC	National Health Information Clearinghouse (ODPHP)
NHIS	National Health Interview Survey
NHLBJ	National Heart, Lung, and Blood Institute (NIH)
NHSC	National Health Service Corps
NHTSA	National Highway Traffic Safety Administration (DOT)
NJA	National Institute on Aging (NIH)
NIAAA	National Institute on Alcohol Abuse and Alcoholism (ADAMHA)
NIADDK	National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases (NIH)
NIAID	National Institute of Allergy and Infectious Diseases (NIH)
NJCHD	National Institute of Child Health and Human Development (NIH)
NJDA	National Institute on Drug Abuse (ADAMHA)
NIDR	National Institute of Dental Research (NIH)
NIEHS	National Institute of Environmental Health Sciences (NIH)
NIGMS	National Institute of General Medical Sciences (NIH)
NIH	National Institute of Health
NJMH	National Institute of Mental Health (ADAMHA)
NINCDS	National Institute of Neurological and Communicative Disorders and Stroke (NIH)
NIOSH	National Institute for Occupational Safety and Health (CDC)
NNIS	National Nosocomial Infections Study
NPS	National Park Service (DOI)
NSFG	National Survey of Family Growth
NTP	National Toxicology Program
OASH	Office of the Assistant Secretary for Health
ODPHP	Office of Disease Prevention and Health Promotion
OHDS	Office of Human Development Services
OHF	Office of Health Facilities (BHMORD, HRSA)
OHMO	Office of Health Maintenance Organizations (BHMORD, HRSA)
OHP	Office of Health Planning (BHMORD, HRSA)
OIH	Office of International Health
OPA	Office of Population Affairs
OSH	Office on Smoking and Health
OSHA	Occupational Safety and Health Administration (DOL)
OTC	over-the-counter
PAGs	Protective Action Guides
PCPFS	President's Council on Physical Fitness and Sports
PHS	Public Health Service
PIRC	Preventive Intervention Research Center (NJMH, ADAMHA)
PMHP	Primary Mental Health Program
RDS	respiratory distress syndrome
SHPDA	State Health Planning and Development Agency (BHMORD, HRSA)
SSBG	Social Services Block Grant
STCP	Smoking, Tobacco, and Cancer Program (NCI, NIH)
STD	sexually transmitted disease
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TEFAP	Temporary Emergency Food Assistance Program
TIC	Technical Jnformation Center (OSH)
TIPP	The Injury Prevention Program
TSS	toxic shock syndrome
USDA	United States Department of Agriculture
VEP	Violence Epidemiology Branch (CHPE, CDC)
VLDL	very-low-density lipoprotein
WIC	Special Supplemental Food Program for Women, Infants, and Children

Chapter 1

Protecting the Nation's Health: A Focus on Our Environment

This document summarizes major accomplishments and new developments in the area of health promotion and disease prevention and reviews some of the more salient Federal contributions to prevention over the last two years. Each chapter of *Prevention '84/'85* provides a unique focus on prevention activities.

Prevention '84/'85 is the third in a series of documents summarizing Federal prevention efforts. The first, issued in 1981, featured achievements in the area of preventive health services, and the second, issued in 1983, featured health promotion in a variety of settings and for specific populations. This volume features a broad range of health protection activities that comprise environmental public health. In combination these three categories constitute the framework of the 15 priority health areas first described in *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (1979).

The concept of health protection has traditionally denoted disease control meaasures, such as immunization and vaccine development. But within the context of a broad prevention strategy, it is useful to expand the definition of health protection to include measures of safety and protection from hazard and injury-at home, at work, and in the environment. At a time when Americans of all ages are taking deliberate action to improve their health status-for instance, eating nutritional meals, exercising, managing stress, and quitting smoking-we're also more aware of environmental factors beyond diet and smoking that can affect our health.

Improved health for the Nation, as a goal of the Department of Health and Human Services (DHHS), necessarily encompasses this dimension of health-how we can address the health challenges posed by our environment, and how we can convert our knowledge, our scientific base into improved health of the public. These issues are components of the priorities comprising the health protection agenda of the Department.

With the recognition that a healthy environment provides the opportunity for individuals to attain their personal and community health goals, this first chapter of

Health Protection Highlights

Prevention '84/'85 features a look at some of the protection issues affecting our health, how the Federal Government is involved in health promotion and environmental public health issues, and how health protection information and systems are being used to combat disease and mortality caused by a variety of environmental hazards. Health protection involves curative efforts but increasingly focuses on both primary and secondary prevention. Primary prevention activities result in the reduction or elimination of exposures which could result in disease, death, or disability. Secondary prevention activities result in the reduction or elimination of the adverse health outcomes of exposures that do occur. Health protection includes all of the activities that enhance our capability to identify, reduce, or eliminate environmental exposures that will result in adverse health effects.

Of the 226 national health objectives described in *Promoting Health/Preventing Disease: Objectives for the Nation (1980)*, 82 fall into the health protection category. The five priority areas of this category are toxic agent and radiation control, occupational safety and health, accident prevention and injury control, flouridation and dental health, and surveillance and control of infectious diseases. Thus, as defined here, health protection embraces a number of environmental issues, and the term *environment* refers to the natural physical environment and to the environment as modified by human activities.

This broad definition of health protection encompasses a variety of health-related concerns and activities of many government and private sector organizations. States and localities play an important part in all aspects of environmental public health, as do all or nearly all departments and independent agencies of the Federal Government-for example, the Department of Health and Human Services, the Department of Agriculture, the Environmental Protection Agency, the Occupational Safety and Health Administration, the Department of Transportation, and the Consumer Product Safety Commission. Public health protection activities range from designing and conducting epidemiologic studies of environmental health risks, to studying populations exposed to identified risks and conducting laboratory research on the toxicological properties of various chemicals, to investigating the implications of environmental diseases for future generations.

This chapter begins by presenting some overriding issues of the health protection agenda: tracking and monitoring environmental conditions that affect the public's health; conducting research using advanced technologies; involving the States in environmental health issues; designing epidemiologic studies; sharing resources; and, preparing for environmental emergencies.

The next section describes eight environmental exposures of current concern, including unintentional injuries, natural disasters, asbestos, and water contamination. The final portion of this chapter provides a number of examples of how our foundation of knowledge and technology is being used to gain a better understanding of environmental risks, their impacts, and their deterrence.

Health protection is an area of health that at times may seem beyond an individual's control, in part because a distinction can be made between free-choice and imposed-choice (e.g., smoking vs. environmental contamination) environmental risks. Health protection may even on occasion seem to be an unmanageable realm of prevention from the societal perspective either because the environmental threat is imperceptible to the human eye-as in the case of a toxic substance with the potential to alter the genetic makeup of a future generation-or, at the other extreme, because the action needed is of such overwhelming magnitude-as, for instance, in the case of controlling exposure to asbestos. Yet, with vigorous research, surveillance, and evaluation, it is becoming evident that our susceptibilities to unsafe living conditions are rapidly changing. Our knowledge and understanding of how the environment affects our health and our creative use of sophisticated technologies hold promise for new discoveries and answers in our pursuit of a reduction of the environmental causes of morbidity and mortality-in our pursuit of a healthy and safe environment that serves to protect our personal health and the health of our communities.

Components of an Environmental Health Agenda

Certain basic, cross-cutting issues are common to mounting effective efforts to address a variety of health protection problems. Some of the most important of these are discussed below.

Environmental Health Surveillance

Protection against environmental hazards depends to a great degree upon reliable methods of identification or detection as well as on reliable methods of surveillance and evaluation. The Federal Government currently is developing several forms of environmental health surveillance systems. These efforts include computer mapping of injury mortality, ongoing surveillance of chronic diseases, monitoring of American Red Cross disaster services data, and revision of injury codes in the International Classification of Diseases. In addition, several Federal agencies are assisting medical examiners in computerizing their operations and in gathering standard data for epidemiologic surveillance.

In order to identify counties that have high mortality rates for each of several types of injuries, color-keyed maps of the United States, created from sex-, race-, and county-specific age-adjusted mortality rates from 1968 to 1980, are being prepared by the Center for Environmental Health at the Centers for Disease Control. Injury epidemiologists will use the maps to develop hypotheses on outbreaks and epidemics, identifying hazards unique to a particular community. States will use the maps in devising strategies for injury prevention and control and for the treatment of injured persons.

Epidemiologic surveillance at a national level will also be facilitated by an agreement being developed

with the American Red Cross to allow Federal access to its disaster services data banks for the purpose of epidemiologic surveillance of disasters. The Center for Environmental Health will assist the American Red Cross in entering field data directly into a computer.

Laboratory Research and Development

Understanding the relationship between exposure to a toxicant and possible health effects is essential to a sound environmental public health program that focuses on prevention. A substantial research effort is a necessary ingredient in developing the knowledge required for recognizing, identifying, and investigating factors that affect environmental public health. Regulatory control of environmental contamination is facilitated by knowledge acquired in the laboratory-research that enables scientists to assess the potential health implications of exposure to a toxicant. Major advances in the biological sciences have provided powerful new concepts and tools that can greatly speed research in environmental health. The new approaches hold particular promise for identifying potentially harmful agents, elucidating their mechanisms of action, determining the sequential reactions through which they cause disease, and detecting such reactions at early enough stages to enable the resulting disease process to be arrested before the onset of clinical illness.

Coupled with the promise of these new tools, however, is the fact that there exist in the environment large numbers of chemicals which may have public health significance, but for which there is minimal or no information available on which to base a health risk assessment. The National Toxicology Program of the Department of Health and Human Services directs a portion of its efforts to improving the sensitivity and reliability of methods for predicting adverse health effects and to increasing the efficiency of selecting and programming chemicals for testing. In recent years, scientific advances in instrumentation have drastically lowered the levels at which environmental toxicants can be detected. Early detection puts researchers one step closer to prevention-that is, closer to identifying a toxicant before disease actually occurs.

A national data base of environmental health studies is being developed in stages. It will allow researchers to interpret laboratory data more readily while also ensuring the integrity of epidemiologic studies. The data base will provide established analytical goals for environmental health studies, a reference system of biological materials and analytical methods, batteries of laboratory tests aimed at detecting organ-specific health effects, guidelines for transferring technology among laboratories, guidelines for interpreting small data sets, and use of multivariate analysis to interpret analytical results.

Although for many toxicants a biological guideline may be suggested for monitoring exposure, epidemiologic studies to establish the relationship between the amount of toxicant in the body of an exposed person-called body burden-and qualitative changes in the suggested biologic guideline are, in general, lacking or insufficient. Whenever basic toxicologic research suggests the potential usefulness of a substance (analyte) for examining the health status of persons potentially exposed to a toxicant, numerous studies must be done before the test can be used for general monitoring. For example, other factors such as life style (e.g., smoking and alcohol consumption), nutritional status (e.g., obesity), and exposure to multiple chemicals (e.g., drugs) may profoundly influence levels of the toxicant. Similarly, the different locations of various toxicants within the human body (for example, in adipose or a vital organ) may present special problems in acquiring samples, and these problems must be examined in the light of practical and ethical considerations.

Although with existing technology researchers can determine the concentration of a toxicant in the environment and, in some cases, the level of the toxicant in tissue or organs, the link between exposure and overt expression of disease remains elusive. If causal relationships are to be established, advanced technology must be applied to controlled animal studies and to clinical and epidemiologic studies. Animal studies are important because they enable scientists to determine markers of disease-to determine what to look for in humans before disease becomes overt. Without such studies, the relative risk of developing disease, the time between exposure and disease, and the knowledge of the biologic mechanisms that may explain the relationship will remain unknown.

State Capacity Building

While most State and local health departments have the capacity to identify and handle public health threats related to communicable diseases, most have specific needs related to the capacity to respond to environmental substances or conditions that threaten the public health. Enhancing the ability of these departments to identify and handle such threats is an essential component of environmental public health protection activities.

State capacity building is a Centers for Disease Control initiative. Efforts to prepare State and local health departments to handle environmental hazards include several fundamental objectives related to strengthening the exchange of information on toxic substances and disease investigations between Federal agencies and State and local health departments; establishing State systems for chronic disease surveillance; and enhancing access to data banks of environmental information that will enable State and local health officials to monitor and estimate exposures to potentially dangerous toxic substances. State laboratories require a solid capacity to evaluate biological (human) specimens for toxic substances and for metabolic responses to them, including State-compatible surveillance systems in local medical laboratories. They also need skilled epidemiologists and other professionals, such as statisticians, computer specialists, and laboratory scientists. Development of these skills often requires the active participation of a Federal partner.

The Department of Health and Human Services has actively supported the expansion of State involvement in environmental health issues. To facilitate State and local health departments' access to environmental health information, the Department has established cooperative relationships between the National Library of Medicine, the National Toxicology Program, and the Association of State and Territorial Health Officials.

In 1984, the Department sponsored the first National Conference on Environmental Public Health, with more than 200 State and local environmental personnel in attendance. The Conferences focused on such environmental health issues as reproductive outcomes in relation to environmental hazards, injury control, and activities of an environmental health laboratory. In addition, the Department has entered into cooperative agreements with Colorado, Iowa, Maine, Nebraska, and Wisconsin. The purpose of these agreements is to enhance the States' abilities to address environmental public health issues related to exposures to toxic or hazardous substances.

Designing Epidemiologic Studies

The potential public health impact of exposure to toxic substances can be assessed in a variety of ways. Epidemiologists may set up risk models and extrapolate from results of animal experiments; study human exposures in occupational settings; use direct epidemiologic studies of affected communities; and analyze reports of cases of accidental acute intoxication. Some limitations, however, are evident in all of these approaches. For instance, one difficulty concerns low-dose effects, for which no data based on human experience over a long period are available. Measuring the exposure of an environmental toxicant can be difficult, especially at low levels and to chemicals that are quickly metabolized. Diseases of low frequency are difficult to assess and, if an increased incidence is to be detected, they require an unusually large number of samples or an unusually long study period-or both. Other problems of epidemiologic studies may stem from the long latency period of some diseases and in some cases the silent course of disease development; the nonspecificity of clinical findings (i.e., changes that could be due to a number of causes); and the multifactorial nature of the disease, which compounds the difficulties of the process of linking disease to specific exposures.

In order to improve the ability of health personnel to detect the potential for significant public health problems, the Department has begun studies of health effects in communities near toxic waste sites. Only exposures that prove to be most hazardous to human health will be selected for further study. The studies are being conducted in four stages: In the first stage, the site-ranking stage, environmental and population data are reviewed on all sites with high contamination levels that are in environmental pathways to which people may be exposed. Sites with the greatest potential for human exposure are selected for pilot studies. This stage is ongoing, and several sites have already been chosen for further evaluation.

In Stage 2, questionnaire data and other environmental data are used to identify persons at highest risk of exposure at the pilot sites. These selected individuals are tested for the levels of toxics in their bodies.

Community Surveys comprise Stage 3. At those sites where Stage 2 studies show elevated body burden levels, the Department will consider conducting cross-sectional, communitywide studies to determine possibly related health effects. In the cohort studies of Stage 4, registries of persons with elevated body burden levels may be established. The registries would be used for long-term follow-up in evaluating the possibility of chronic health effects as indicated by data from Stages 2 and 3. Such evaluations would help State and Federal health agencies make recommendations for protecting public health at these sites.

Access to Technical Information

The success of every phase of environmental public health-from program planning (e.g., site and chemical selection) to emergency response-depends on the availability of reliable, definitive information upon which to base decisions. In emergencies concerning hazardous substances, health personnel require access to concise, accurate information on the known acute and chronic health effects of expbsure to the substances as well as information on protection from exposure, treatment methods for adverse effects, chemical reactivities and environmental fate, firefighting and spills containment methods, evacuation recommendations, sampling and analytical methods, and neutralization and clean-up procedures. Each emergency may involve different sets of chemicals, with their own unique set of hazards, and this information must be readily available for a full range of chemical substances and compounds.

The National Library of Medicine (NLM) produces the Toxicology Data Bank (TDB) as a part of its MEDLARS computer system, which includes various biomedical data bases. The TDB offers comprehensive, peer-reviewed, substance-specific profiles of more than 4,000 chemicals, each including over 60 different data items. To meet increased demand for information, NLM continues to add chemicals and data items to the TDB. The Bank can be searched for information about a specific chemical or for lists of chemicals that share a combination of properties or cause particular symptoms. The latter capability may be important in epidemiologic investigations in which the cause of particular symptoms must be determined.

Response to Environmental Emergencies

An emergency response system is in place to assist Federal, State, and local agencies in addressing health problems that arise as a result of man-made or naturally occurring substances being released into the environment. Experts in the fields of medicine, epidemiology, toxicology, laboratory science, genetics, cancer, risk assessment, logistics, and geology are available on a 24-hour basis to respond to an emergency. An advanced information center, capable of accessing data bases throughout the country, has been established to assist health responders at emergency sites. Assistance has

been given in such divergent situations as volcanic eruptions, transportation accidents, fires, or explosions which cause releases of chemicals in populated areas. Health scientists may research clusters of disease possibly caused by environmental toxins and study health effects possibly caused by misapplication of pesticides, herbicides, or other commercial products. Laboratory support has been provided by State and local agencies as well as by the specialized facilities of the Food and Drug Administration, the Centers for Disease Control, the National Institute of Environmental Health Sciences, and the National Center for Toxicological Research.

With the advent of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, or Superfund), the Department's emergency response system was further enhanced. It presently assists the Environmental Protection Agency (EPA) and State environmental agencies in their emergency response efforts. U.S. Public Health Service advisors are assigned to EPA regional offices throughout the country to coordinate health responses.

Because of the highly technical and complex nature of environmental emergencies, it is not uncommon for individuals from many different agencies and all levels of government to be involved. The DHHS health response team provides guidance on worker safety and health, sampling methodology, medical consultation to physicians in the area, laboratory support, exposure assessment studies, public affairs assistance, evacuation recommendations, public health advisories, and information support.

Selected Environmental Risks

Protecting our health from hazards that affect the health of entire communities or segments of the population involves taking a close look at how we interact with our environment and how we can spot and prevent environmentally induced morbidity and mortality. Presented here is a brief look at a sampling of environmental hazards that are or have the potential to be harmful to our Nation's health.

Unintentional Injuries

Unintentional injuries are the leading cause of preventable early death. Each year, nearly 100,000 Americans die after sustaining an unintentional injury outside the workplace. An estimated 57 million Americans are similarly injured and, as a result, 15 million are bedridden. Each year, about 80,000 Americans are permanently disabled by injuries that occur in the home. Injury rates are highest in children, the elderly, and those living in environments that increase the risk of injury. Unintentional injuries are collectively by far the leading cause of potential years of life lost. More years are lost from these injuries than from any single disease. Each year an estimated 4 million years of life are lost because of injuries, compared with less than 2 million each for cancer and heart disease.

In addition to human suffering and death, injuries place an enormous burden on this country's economic resources. The annual cost (including lost wages and loss of productive life) for injuries outside the workplace is estimated at $55 billion. To redress some of the historical imbalance between the severity of health problems resulting from injuries and the allocation of resources targeted to the area-such resources as public health and medical school curricula, health department programs, and government budgets-a greater emphasis is being placed on injury prevention.

Advocates of injury control and injury prevention seek to correct the imbalance by using the scientific, epidemiologic approach of disease etiology and disease prevention programs. There are no sharp scientific distinctions between injury and disease. We have learned that injuries are not "accidents"; indeed, they are both predictable and preventable. Epidemiologic analyses of injuries describe the relationships of host, agent, and environment and provide useful information about injury prevention.

Automatic or "passive" protection-for example, engineering the environment to provide protection-has gained recognition as a major focus of injury prevention efforts. The purpose of prevention is to reduce the frequency and severity of injuries and to reduce costs in terms of medical expenses and lost productivity. The Department of Health and Human Services has identified prevention and control of injuries as a health priority for the 1980s, and it has established specific and measurable national objectives regarding injury prevention and control to be achieved by 1990. Given this priority, the Federal Government helps to catalyze and support a variety of prevention efforts to protect the public from accidents and injuries and to reduce the risk of their occurrence.

Numerous agencies within the Department have major injury prevention components with a broad range of responsibilities. These responsibilities include the direct delivery of services (e.g., funding for the purchase of smoke alarms), establishment of safety standards, sponsorship of education and information efforts, building the capacity of other sectors to help foster a safe environment, supporting basic and applied research, and establishing surveillance systems. The Centers for Disease Control (CDC), as the DHHS agency designated to monitor this health protection priority, assists State and local health departments in their injury prevention efforts and coordinates activities undertaken jointly by Federal agencies, State and local governments, and private sector organizations.

Meteorologic and Natural Disasters

The Public Health Service (PHS) responds to health problems created by meteorologic and other natural phenomena. Extremes of temperature; storms, including tornadoes and hurricanes; floods; and rarer phenomena, such as volcanic eruptions, account for an average of 1,200 deaths per year. On occasion, even more extensive health effects are seen. In 1980, which had one of the more severe heat waves on record, more

than 1,700 persons died as a direct result of exposure to heat.

The Federal Government conducts epidemiologic research of factors that contribute to deaths and severe injuries that may result from natural phenomena. Recent projects include analyses of morbidity and mortality resulting from severe heat in 1980 and later summers, the volcanic eruption of Mount St. Helens in Washington State, and the swarm of tornadoes that struck the Carolinas in 1984. Epidemiologic research examines the types of illness caused by these events and looks at contributing and mitigating factors. These studies have provided new insights about the health effects of meteorologic and natural disasters, insights that in turn lead to more effective preventive strategies.

Ionizing Radiation Hazards

Since the reactor accident at Three Mile Island, Pennsylvania, in 1979, the public has expressed a growing concern about the dangers of environmental radiation. Major concern focuses on three areas: hazardous waste sites, reactor and transportation accidents, and elevated natural radiation. Protecting the public from environmental radiation includes reducing exposure from a hazardous waste site, preventing exposure during an accident, and reducing exposure from elevated natural radiation. Since radiation exposure is associated with an increased risk of cancer, it follows that the public's health can be improved by reducing present radiation exposures and preventing future exposures.

The Public Health Service works with other groups in evaluating the risk to the public from abandoned radioactive waste sites. It provides health information and assistance to other Federal agencies and to States in remediating contaminated sites. The goal of this effort is to reduce or eliminate the exposure as quickly as possible, thus minimizing future health effects. The size of the sites and the type of contamination have varied greatly, and the number of persons exposed has ranged from fewer than 10 to more than 100. The number of hazardous waste sites that will pose a radiation hazard cannot be predicted, but several have been discovered, and more are expected to be found.

Emergency planning has become a major aspect of public health protection from radiation. The Centers for Disease Control has the lead role in coordinating response to radiation emergencies within the Public Health Service. The Food and Drug Administration's Center for Devices and Radiological Health has developed guidelines for protecting the public in the event of a release of radioactive material. These guidelines establish contamination levels at which residents must be evacuated or sheltered. They also set the levels of contamination in food and milk that make them unacceptable for human consumption. The Center's radiation control programs include research into the health effects of radiation, safe radiation practices, and standards development and enforcement for radiation-emitting products (see Center for Devices and Radiological Health Prevention Highlights). The Food and Drug Administration has recently begun work on protective action guidelines for war-time events. These emergency planning activities of the Public Health Service are designed to reduce or prevent harmful radiation exposure and limit future health effects from radiation accidents.

Scientists are also studying natural radiation levels and, in particular, radon gas, a radioactive decay product of uranium and thorium. Since uranium deposits are common throughout the United States, radon is continuously released from the soil. Normally, this radon is diluted and poses no health hazard. Under special circumstances, however, radon can build up to dangerous levels inside a dwelling, and action must be taken to lower the resulting exposure. The Public Health Service has investigated numerous locations with elevated indoor radon levels and is developing a plan for evaluating these sites and assessing the threat they pose to the public. The problems associated with elevated levels of natural radiation are not yet totally understood, but investigations of indoor radon pollution over the next few years are expected to have significant implications for the public health.

Asbestos

Asbestos is the common name for a group of natural silicate mineral fibers that have been used in a wide variety of products, including household and building materials. All forms of asbestos containing crysotile (present in about 95 percent of asbestos) tend to break into a dust of tiny fibers that can become suspended in the air and inhaled or swallowed. Once inhaled or swallowed, the fibers lodge in the tissue. Studies of workers and others exposed to asbestos have shown that the material can cause asbestosis and cancer of the lung, plura, and gastrointestinal tract, as well as problems for respiratory function. Asbestos is a health risk when its fibers are released from the fiber-containing material and are in the air people breathe.

In November 1980, a committee composed of representatives of the National Institute for Occupational Safety and Health and the Occupational Safety and Health Administration (OSHA) reviewed the scientific information on asbestos-related diseases and reviewed the adequacy of the current OSHA occupational health standard. The committee recommended that worker exposures to asbestos be controlled to the maximum extent possible. NIOSH has recommended a standard of no more than 100,000 fibers longer than 5 microns per cubic meter of air, averaged over an 8-hour workday. A significant consideration in establishing an exposure limit is the lowest exposure level detectable by available analytical techniques.

Now that scientists are learning more about the potential cancer-causing effects of asbestos at low levels, concerns about non-occupational exposure to asbestos fibers have been raised. Evaluations have shown that potentially hazardous (i.e., when released) asbestos-containing materials are widespread in school buildings. The surfaces of some of these materials are heavily damaged or deteriorated, making it easier for fibers to escape. Investigation of potential asbestos exposure in this setting entails unique considerations because the child population differs from other non-occupational populations in age, density, and behavior. When chil-

dren are exposed to asbestos in school buildings at an early age, they can exhibit resulting disease early in their lives.

The widespread presence of asbestos-containing materials in our environment and the known adverse health effects of exposure to these fibers require that unnecessary exposure to asbestos fibers be prevented. Furthermore, because smoking increases the harmful effects of breathing asbestos fibers, smokers have a higher risk than nonsmokers of impaired health from asbestos exposure. Thus special prevention measures need to be directed to smokers who are likely to be exposed to asbestos.

Dioxins

Dioxins are a family of 75 closely related chemicals. They range widely in toxicity, with 2,3,7,8-tetrachlorodibenzodioxin (TCDD), a known teratogen and carcinogen in animals, being the most toxic. These chemicals are produced as unwanted by-products in the manufacture of chemicals either containing or manufactured from chlorinated phenols. Dioxins have contaminated the environment since the time when the original product was dispensed, when industrial wastes were mishandled, and during industrial accidents. The health effects of these environmental dioxin contaminants are being studied, and clean-up activities are aimed at removing the contaminants.

One study was instigated in January 1983, years after waste oil containing 2,3,7,8-TCDD had been sprayed in residential, recreational, and work areas in Missouri to control dust. Researchers selected about 500 people who may have been exposed to the dioxin at residential areas in eastern Missouri. These individuals completed questionnaires and received detailed medical examinations and a series of laboratory tests to detect subclinical effects in key target organ systems.

This study produced no consistent medically related indications of increased disease prevalence that could be directly related to the reputed exposures. An increased prevalence of self-reported kidney/urinary problems, a higher proportion of leukocyturia (the discharge of white blood cells in the urine), and a greater prevalence of microscopic hematuria (blood in the urine) in the group at high risk of exposure indicated an apparent trend of urinary tract abnormalities. None of the findings from the medical histories or the immune-function assays showed statistically significant differences, and no significant differences in standard and specialized liver-function test results were detected.

At the request of the Environmental Protection Agency and the State of Missouri, the Centers for Disease Control also undertook a risk assessment study of 2,3,7,8–TCDD levels in soil. The Centers advised Missouri that in two residential areas, soil levels above 1 part per billion of TCDD could result in an unreasonable risk to human health. The study of 2,3,7,8–TCDD levels in soil is one starting point for analyzing the potential environmental risk of dioxin exposure. Characteristics unique to each situation-including locations of the contaminated soil, composition of the population exposed, and the likely frequency and duration of future exposures-factor significantly in assessing each case. These characteristics and the potential for limiting or eliminating future exposure in a timely fashion influence decisions about appropriate actions at specific sites.

In special areas-for example, horse-riding arenas, with high levels of suspended dust or soil-inhaling TCDD may become a prominent route of exposure, and this would affect risk estimates. Researchers have not yet fully considered other routes of exposure that may be indirectly related to soil contamination, for example, food-chain contamination from grazing cattle or bioconcentration in bottom-feeding fish. Standards for acceptable levels of TCDD in soil in pastures where cattle graze and pigs root might have to be lowered because of the potential for bioaccumulation.

In similar residential areas, 1 part per billion of TCDD in soil is a reasonable level at which to consider limiting human exposure. Future studies should give primary attention to children at play who might ingest the soil, particularly in light of findings by National Institute of Environmental Health Sciences (NIEHS) intramural scientists that TCDD represents a potential hazard to humans if ingested. Until now, many scientists thought that TCDD bound to soil so tightly as to represent a relatively low health risk in areas with contaminated soil. However, the NIEHS researchers found significant absorption of TCDD by rats and guinea pigs after ingestion of soil from two Missouri sites contaminated 13 years earlier. The bioavailability of TCDD was measured in terms of the development of a characteristic clinicopathologic syndrome in guinea pigs, hepatic enzyme induction in rats, and the uptake of this chemical in the livers of both species. A critical public health concern is the possible hazard to people playing outdoors who may contact and swallow dioxin-contaminated dirt. People also ingest dirt from contaminated hands, from food, and from other sources.

In assessing the implications of this level of concern for any particular site, scientists recognize a complex set of underlying assumptions, such as the amount of TCDD people might receive, how often they are exposed, and whether humans and animals respond to TCDD in the same way.

Agent ***Orange.*** Another study of the environmental health risks related to dioxin exposure concerns the herbicide Agent Orange. Between August 1965 and February 1971, some 11.3 million gallons of Agent Orange (so named because of the orange markings on the drums in which it was shipped) were sprayed over much of South Vietnam in military operations designed to deprive the enemy of food and cover. TCDD was created during the manufacture of the pesticide 2,4,5-T which went into Agent Orange and was in the Agent Orange that was sprayed. The 2,4,5-T used today has a higher degree of purity.

In January 1979, in response to veterans' concerns that their current health problems had resulted from their exposure to Agent Orange while serving in Vietnam, the U.S. Congress enacted legislation (Public Law 96-151) directing the Veterans Administration to design

and conduct an epidemiologic study to determine if exposure to Agent Orange had caused long-term adverse health effects in Vietnam veterans. In November 1981, the scope of the study was expanded (by Public Law 97-72) to include other factors in the "Vietnam Experience," including medications and environmental hazards or conditions.

In January 1983, the responsibility for designing and conducting the investigation was transferred from the Veterans Administration to the Centers for Disease Control. In May 1983, CDC scientists completed guidelines (protocols) for the Agent Orange and Vietnam Experience studies, recommending that a third investigation be conducted at the same time to determine the Vietnam veterans' risks of developing selected types of cancers (Selected Cancers Study). Pretests of the main study were completed in December 1984, and the main study began in January 1985 and will continue into 1989.

Laboratory Analysis of Dioxins. A brief description of the problems encountered in the analysis of human specimens for dioxin helps to illustrate the complexity of scientific investigations of potential environmental health hazards. It also reveals the need for both high analytical sensitivity and specificity in the laboratory.

Biological specimens are analyzed for dioxins on a gas chromatograph/mass spectrometer. The amount of work involved in preparing a specimen for analysis is substantial. The mass spectrometers used for analyses must have high sensitivity at high resolution, these instruments are very costly, and the personnel who operate them must be highly trained. Furthermore, the work is time-consuming; for example, it takes five people 1 week to analyze 15 specimens.

Although various steps in the analysis procedure are likely to become automated, detection of dioxins is still complicated by other factors. On the basis of current analytical requirements, 10 grams of adipose (fat) tissue-where dioxins are usually stored in the body-are required to detect 1 part per trillion of a given dioxin. Unfortunately, human adipose must be obtained by an invasive procedure-one that is therefore subject to ethical and practical concerns. Attempts are being made to measure dioxin in human serum; however, current analytical techniques cannot detect dioxins at parts-per-quadrillion-the level at which they are believed to be present in serum.

The safety of employees working with the dioxins is also a concern. Requirements that they handle dioxins in special areas, wear protective clothing, and complete appropriate training are integral parts of the measurement process. At the Centers for Disease Control, a special laboratory was built for synthesizing dioxins. It has special safety features, including special ventilation, shower facilities, and "glove boxes" in which the toxicants are handled.

Lead

Childhood lead poisoning continues to be one of the major environmental health problems of the 1980s, largely because of the contaminant's ubiquituous nature. In the United States, lead poisoning has been reported in all socioeconomic groups and in all areas, though poor minority populations in urban areas appear to be most affected. About 27 million homes in the Nation contain paint with varying amounts of Lead. Not all of these homes are an immediate hazard, but as many of them age and deteriorate, they may become a hazard.

The Department of Health and Human Services has made the general public and public health officials aware of the problem through a grant demonstration program showing that the sources of lead poisoning are many and varied. Blood lead levels are decreasing as the use of leaded gasoline decreases. In terms of reducing background blood lead levels, removing lead from gasoline as rapidly as feasible is probably the most important public health measure.

Emissions from industrial sources should be reduced sufficiently to achieve the current ambient air lead standard. New factories, as part of their licensing specifications, should be required to have minimal lead emissions. In addition, the public should be informed about the hazards associated with burning old battery casings, colored newsprint, waste oil, and wood covered with lead-based paint. Finally, screening for lead poisoning must become a routine part of pediatric care, as it has in work supported by many of the child health Federal block grants to States. Childhood lead poisoning will continue to be a problem well into the next century, but proper actions taken now will assure a much lower prevalence.

Polychlorinated Biphenyls

Only a few substances are persistent and measurable in the body to the extent that they can be used as indicators of exposure to a toxic waste site. The polychlorinated biphenyls (PCBs) have these characteristics, and they are among the chemicals most frequently found at toxic waste sites. Transmitters and capacitors are sources of PCBs. The level of PCBs in the serum portion of blood is a reliable indicator of exposure because PCB levels in fat and serum equilibrate and remain at a relatively constant ratio for many years; furthermore, background levels of serum PCBs are reasonably well defined. The serum PCB levels of most people without occupational exposure to PCB are in the low parts per billion (ppb) range, with a median varying between 5 and 7 ppb. More than 95 percent of the values are below 20 ppb. The distribution is directly related to age, race, and socio-economic status.

In 1983, Federal agencies assessed community exposure to three sites contaminated with PCBs. In each case, no potentially exposed persons were found to have significantly elevated serum PCB levels attributable to exposure from the sites. The Centers for Disease Control and the State and local health departments concluded from these negative results that no further, larger studies in these three communities were needed. Nonetheless, other sites contaminated with PCBs may be further studied, with a view to evaluating new path-

ways of potential exposure, information that would be useful in evaluating exposures to other contaminants.

Other investigators at the National Institute of Environmental Health Sciences are using laboratory approaches to enhance our ability to evaluate quantitatively the consequences of human exposure to chemicals. This approach should contribute to establishing quantitative risk assessment in humans. An example of this effort is an NIEHS study of a 1979 incident in Taiwan in which rice oil, a dietary staple in that country, was contaminated by PCBs over a nine-month period. This insidious exposure caused dramatic dermatological changes, including severe acne, discolored and deformed nails, hyperpigmented gums, and swollen eyelids. Poisoned women produced low birth weight children, some of whom were affected with similar signs and symptoms. In general, these changes gradually lessened over time.

Little is known about how PCBs and their contaminants induce such toxic effects, but in experimental animal studies these agents caused marked increases in levels of enzymes that metabolize drugs and chemicals. To study the possibility that similar changes can occur in humans, NIEHS scientists measured levels of several of these enzymes in placental tissue obtained from women who were exposed to PCBs and who gave birth during 1983 and 1984. The activity of enzymes in the placental specimens from the exposed women was substantially elevated, typically several hundred-fold over activity measured in placental specimens from unexposed Chinese women. This study demonstrates that exposure to chemicals, such as PCBs, which are widespread environmental contaminants, can cause substantial and persistent effects on human metabolism. Such changes not only may be important in themselves but also may alter the body's response to drugs or other foreign chemicals.

Water Contamination

Organic solvents (benzene, toluene, perchlorethylene, and the like) are among the man-made organic chemicals that most frequently enter the Nation's water supplies. People are exposed by drinking, skin contact, and, since most of the solvents are volatile, by inhaling air in confined spaces with intimate air-water contact (the bathroom and laundry). Some solvents are known to cause cancer in animals, and a few are'suspected of causing cancer in humans. Other toxic effects include tissue damage and impairment of function in many organs, particularly in the liver and the nervous system. The extent of the problem is best reflected in the fact that 28 percent of wells serving communities of at least 10,000 residents contained one or more volatile organic solvents at levels above the detection limits. State and local health or environmental departments, the U.S. Environmental Protection Agency, the U.S. Geological Survey, and the Center for Environmental Health of the Centers for Disease Control are studying the spread and level of water contamination, its sources, and its effect on the ecology.

Studies of solvent-contaminated water are the source of data on the spread and degree of contamination, the chronic toxicology of solvents in animals, and the possibilities of water treatment. The Department's activities focus on contributing to and reviewing data on the distribution of solvents, studying the impact of soil contamination on groundwater and surface water, assessing the kind and extent of the hazards to humans posed by contamination of local water supplies, and reviewing issues associated with remedial actions at such sites. In 1984, the Department's activities were expanded to include studies of the adequacy of and alternatives to quantitative methods for predicting health effects of low-level contamination from data on exposures to high-level contamination and the effect on human health of exposure to a mixture of chemicals, rather than to just one chemical. The focus of all of these activities is on preventing, reducing, or eliminating contamination and thereby protecting the health of the public.

Scientific Fields and Approaches to Health Protection

Numerous fields of study and activity are brought to bear on problems in the health protection arena. These include the efforts discussed below in genetics, reproductive and child health, cancer, and organ-specific diagnostic tests.

Genetics

Each person's genetic makeup influences how he or she responds to exposure to contaminants in the environment. Cytogenetics-which combines cytology (the study of the cell) and genetics-is used to detect adverse effects of environmental toxins on the genes and chromosomes. Investigators need to determine whether environmental exposures have affected the germ cells, which could effect future generations, or somatic cells, which could lead to cancer and other diseases in the exposed persons. New tests are being developed to measure genetic damage in populations exposed to environmental chemicals, so that early corrective measures can be taken.

Current research on somatic cells could lead to an understanding of the relationship between specific chromosome break sites, oncogenes (genetic material thought to carry the potential for cancer), and various forms of cancer-the leukemias, lymphomas, and lung cancer. Once we understand the basic mechanisms, we can take a more quantitative approach to the study of exposure-to-disease relationships, and we will be more likely to reach our ultimate goal-the detection of human susceptibility to environmental toxins.

Reproductive, Infant, and Child Health

In reproductive, infant, and child health, the Public Health Service's goal is to identify and reduce the environmental causes of morbidity and mortality. Of the

3.6 million live births in this country in 1983, many babies started life with special risks: 200,000 were born to adolescents under 18; over 900,000 were born to women who smoked during pregnancy; and over 1 million were born to women who drank during pregnancy. Almost 40,000 live born infants died in 1983 before reaching their first birthday.

Low birth weight (less than 2,500 grams) is the most important risk factor associated with infant mortality. Compared with the decline in infant mortality, the incidence of low birth weight has declined relatively slowly. No single factor accounts for all variations in birth weight, and, hence no single intervention will be effective.

We do know, however, that the physical and emotional health of parents and the knowledge, attitudes, and skills that they bring to parenthood significantly influence the care and nurturing of newborn infants and growing children. Changes in the social and environmental circumstances of parents may also affect the health of infants and children. Researchers study environmental impacts on infants and children as well as on adults. The physical environment of children today may include chemical and radiation exposures; exposure to lead, pesticide, and toxic wastes; and use of drugs and alcohol. Examination of these and other environmental variables, such as nutrition and exposure to smoke in the home, are part of the Public Health Service's prevention effort to identify trends in infant and childhood morbidity and mortality.

Cancer

Identifying the environmental risk factors associated with malignant diseases is an area of intense scientific investigation. Take, for instance, the study of cancer incidence and mortality. As the number of older Americans increases, the number of persons having a diagnosis of cancer or dying from cancer will also increase, because rates for cancer occurrence and death rise with age. In 1984, an estimated 1.3 million Americans of all ages were diagnosed as having cancer, and 450,000 died from the disease. The lifetime risk of being diagnosed as having cancer is about one in three, and the lifetime risk of dying from cancer is about one in five.

Ethnic variations in cancer rates and the occurrence of multiple cases of cancer in some families suggest that a person's genetic makeup may affect her or his cancer risk. These inherited susceptibilities cannot be changed with the medical technology available today, but they do make it possible for us to identify persons who have a higher-than-expected risk of cancer. Hope for preventing cancer occurrence and death rests with changing exposure to behavioral and environmental risk factors for cancer, screening asymptomatic persons at high risk for the earliest detectable stages of cancer, and treating those diagnosed as having cancer with the best available therapy.

Despite advances in our understanding of cancer biology and the development of more predictive short-term tests for genotoxic potential, the two-year exposure study in rodents remains the most definitive method for detecting chemical carcinogens. All recognized human carcinogens that have been studied adequately have also been shown to cause cancer in laboratory animals under appropriate experimental conditions. The identification of carcinogens in animals, therefore, provides guidance as to potential chemical hazards in humans, exposure to which should be minimized as an aid to cancer prevention. Thus, the Department's National Toxicology Program (NTP) is a key component in the effort to provide data to aid health regulatory agencies and the biomedical community in assessing and estimating human health hazards and in designing means to prevent these hazards.

To identify those potential chemical carcinogens of most importance to human health, the NTP evaluates large production volume chemicals with a high probability of human exposure. More specifically, test chemicals are chosen on the bases of the extent (and level) of human exposure, volume of production, nature of the use, availability of toxicologic data (or lack thereof), suspected biological activity (such as mutagenicity), and chemical structure. The majority of the NTP two-year studies are managed by the National Institute of Environmental Health Sciences, whose director heads NTP; some studies are coordinated by FDA's National Center for Toxicological Research (NCTR) and others by CDC's National Institutes for Occupational Safety and Health (NIOSH). The NIOSH-managed studies generally involve substances and routes of administration associated with human occupational exposures. Although carcinogenic activity is a major endpoint in these studies, several ancillary studies are commonly included to define more adequately chemical toxicities and their causes.

Many cancer cases and deaths have been attributed to use of tobacco and improper diet. The Public Health Service is monitoring the percentage of persons who already use tobacco and is sponsoring programs both to warn those who have not yet begun to use tobacco (for example, school children) against starting and to help those who want to stop. Research is continuing into why it is so difficult to stop smoking cigarettes.

Certain dietary factors (e.g., the amount of dietary fiber) may reduce the risk of developing some kinds of cancer, whereas other dietary factors (e.g., the amount of dietary fat) may increase the risk. The National Cancer Institute recommends that Americans keep trim and double the amount of fiber-containing foods that they eat everyday while reducing the amount of dietary fat by at least 25 percent, thereby reducing the incidence of cancer of the colon, breast, prostate, and endometrium. The Institute is also funding studies to test whether increasing dietary intake of vitamin A and its derivatives, vitamin C, vitamin E, and selenium reduces the cancer rate.

Because most cancer risk factors are unknown and known factors may be hard to control, identifying and screening asymptomatic persons at high risk for cancer for the earliest detectable stages may reduce cancer deaths-if early treatment is successful. Persons at high risk for specific kinds of cancer include those with a strong family history or those with two or more risk factors for that cancer. New laboratory methods can

determine whether suspected cancer-causing chemicals have damaged a person's chromosomes and how well the person's body can repair the damage. Other markers for early cancer are being studied for their value in screening.

Organ-Specific Diagnostic Tests

The potential health effects of exposure to toxic chemicals in the environment have created the need for tests to be used in evaluating the health status of individuals at risk. The target organs for environmental toxicants include the respiratory tract, skin, liver, kidney, and reproductive, nervous, cardiovascular, and immune systems.

Most information supporting the examination of a particular organ system arises from animal studies of relatively short duration and high exposure or from occupational studies of exposed individuals. Because so many variables are associated with population studies, investigators must examine numerous risk factors in order to identify health effects, which in most instances may be expressed only as subtle increases in health disorders and disease susceptibility.

The Public Health Service is developing an environmental health hazard evaluation that will integrate medical histories, information obtained from physical examination, and laboratory data relating to the target organ systems. At first, the evaluation will focus on the functional status of the liver, kidney, immune, and lipid metabolic systems. The laboratory aspects of the evaluation will include routine clinical methods as well as several advanced technologies under development to detect subtle physiological or health changes. Data from the clinical profiles will be processed by advanced techniques of statistical analysis and pattern recognition for detecting correlations between physiological states and exposure to toxic chemicals.

The kidneys are uniquely sensitive to toxic damage because of their extensive perfusion by the circulatory system and their normal physiologic function as a major organ in the excretion of metabolic wastes and toxicants. A kidney profile is being developed for use in detecting exposure to toxicants. The profile includes four enzymes found in urine. After acute exposure to toxicants, cells lining the tubules of the kidneys slough off into the urine and cause the levels of the enzymes to rise. These enzymes are found in many tissues other than those of the kidney, but elevated concentrations in urine can help confirm an acute toxic insult. A relatively new, high resolution technique called two-dimensional electrophoresis is being used to identify and quantitate proteins in body fluids-in this case, urine. In this technique, the proteins are separated, and two-dimensional protein "maps" are generated, which may be able to indicate the type and degree of kidney dysfunction.

The liver is the primary organ for metabolizing organic toxicants, and prolonged, often asymptomatic, exposure can lead to chronic liver disease, usually manifested as cirrhosis or cancer. Diagnostic liver profiles are being developed that reflect inductive or adaptive changes, damage to liver cells, or, since bile flow is a major function of the liver, impaired flow of bile.

The clinical and pathologic signs of heart disease caused by exposure are indistinguishable from signs of heart disease caused by other factors, and the prevalence of the disease makes it particularly difficult to study. The cardiovascular profile is a profile of blood lipids (fats) and proteins that transport lipids in the blood. Blood concentrations of cholesterol, triglycerides, and high-density lipoproteins are known to be altered by certain toxicants, possibly as an indirect result of liver dysfunction.

Study of the impact of environmental hazards on the immune system illustrates once again the complexity of the exposure-to-disease relationship. The immune system is an interaction of many types of white blood cells, tissues, hormones, and other components. In this system, abnormalities are difficult to pinpoint without extensive testing. The two types of immunity, cell-mediated and humoral, can be assessed separately, although they are often interdependent. Cell-mediated immunity is dependent on white blood cells called T-cells; antibody-mediated immunity is dependent on white blood cells called B-cells. Adverse effects of toxicant exposure are now under study and include suppression of immunity against viruses and bacterial infections. In testing for cell-mediated immune function, total numbers of white blood cells and the ratios of subgroups of T-cells are determined. Cell-mediated immunity has many other components, but T-cell function is the main one for understanding this function of the immune system. Humoral or B-cell immunity can be evaluated by determining immunoglobulin concentrations in serum.

Summary

The complex interplay of health and the environment is the source of a variety of prevention activities-from surveillance to research and development to public information programs-the purpose of which is to protect our health. The scope of these activities-ranging from how we can prepare to respond to environmental emergencies to how to plan long-term epidemiologic studies of the impact of certain environmental exposures on our health-reflects the depth of concern about how to protect our health from environmental contamination and environmental hazards. It also reflects a commitment to use knowledge and insight about our environment to improve the Nation's health.

As with all of the health objectives set forth in *Promoting Health/Preventing Disease: Objectives for the Nation* (1980), achieving those objectives related to health protection will require action by Americans in all walks of life, in their roles as concerned persons, as parents, and as citizens of their Nation, States, and local communities-and it will require the commitment of health professionals, business and industry, labor, voluntary organizations, schools, churches, consumer groups, health planners, legislators, and public officials in health departments and other agencies at all levels. Our reward for this concerted effort will be a better quality of life and a better environment in which to live.

Chapter 2

Health Status Trends

This chapter of ***Prevention '84/'85 uses*** charts and graphs to highlight health-related trends, in some cases for the entire population and in other instances for the five age categories: infants (under 1 year), children (1 to 14 years), young adults (15 to 24 years), adults (25 to ***64*** years), and older adults (65 years and older). Inspection of the major causes of disease and death by age group-and, for certain causes, by race and sex as well-and of the status of such health indicators as smoking rates, the incidence of sexually transmitted diseases, high blood pressure control, and childhood disease rates provides one measure of the Nation's progress in disease prevention. While helping to elucidate health trends, these figures also provide a discrete view of some of the components of our health status.

Health Status Trends

Overall Trends

One way to assess the health status of the Nation is to examine overall trends in causes of death and death rates as well as to examine these statistics at different life stages and for different populations. The overall trends provide a baseline against which other information can be contrasted.[1]

In 1982 the age-adjusted[2] death rate reached an all-time low of 553.8, a 69 percent reduction from the 1900 rate (see Figure 1). (The Nation's death rate in 1982 was 852.0 deaths per 100,000 population, down from the 1981 rate of 862.4.) Life expectancy at birth resumed its upward trend, reaching new highs of 74.6 years in 1982 and 74.7 years in 1983. Life expectancy for females in 1983 (78.3 years) exceeded that for males (71 .0) by 7.3 years. This difference between the sexes, which was widening for many years, appears now to have stabilized. Life expectancy at birth for the White population in 1983 was 5.6 years greater than for the Black population, a difference that has decreased from 8.4 years in 1950. The largest gain (5.2 years) in life expectancy between 1970and 1982 was for Black females.

The 15 leading causes of death accounted for 89 percent of the total number of deaths in 1982. The top four causes of death in 1982 were diseases of heart; malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (cancer); accidents and adverse effects; and cerebrovascular diseases (stroke; see Figure 2). These four causes continued to account for almost three of every four deaths in the United States.

The largest decline (11 percent) between 1981 and 1982 in age-adjusted death rates was for pneumonia and influenza, followed by chronic liver disease and cirrhosis, accidents and adverse effects, and atherosclerosis. Increases in age-adjusted death rates between 1981 and 1982 occurred for three causes-malignant neoplasms, including neoplasms of lymphatic and hematopoietic disease; suicide; and septicemia.

The 1982 mortality levels for the 15 leading causes of death were higher for males than for females, and for 13 of the 15 leading causes, mortality was higher for the Black population than for the White population. The age-adjusted death rate due to homicide was almost four times as high for males as for females and almost six times as high for Blacks as for Whites. Age-adjusted rates for Blacks were lower than for Whites for just two causes-suicide and chronic obstructive pulmonary diseases and allied conditions.

Death rates for every age group of both sexes declined between 1981 and 1982, a continuation of the general downward trend observed since 1950. While the age-adjusted death rate for males decreased 3 percent, it continued to be 1.8 times the rate for females. In 1982 the age-adjusted death rate for Blacks was 1.5 times that for Whites, the same as the ratio in 1981.

One dimension of the multitude of factors that affect these trends-a changing environment-has just been described in Chapter 1. Other variables such as changing lifestyles and advancements in our use of research and technology to prevent and treat diseases are addressed in Chapter 3, in the context of the array of prevention activities of the Department of Health and Human Services and other Federal agencies.

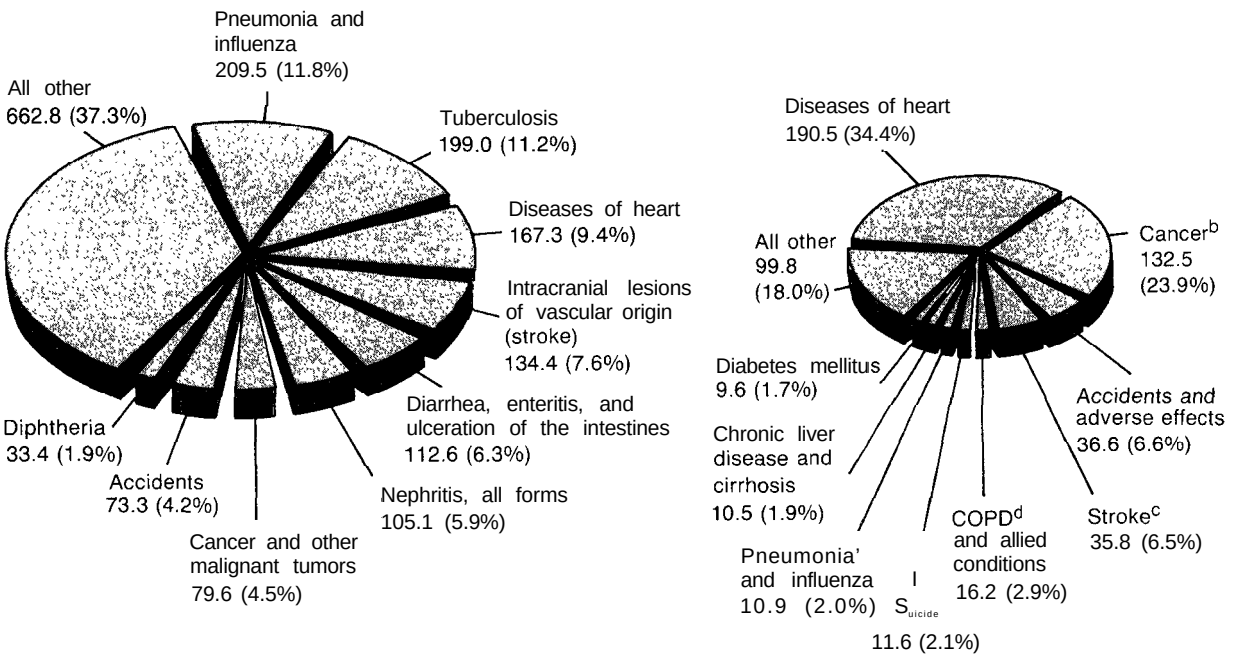
[1] Effective with data for 1979, causes of death are classified by the *Ninth Revision International Classification of Diseases* (ICD-9). This change has created new cause-of-death category titles and corresponding category numbers. These changes in classification of causes of death may result in discontinuities in the display of data. Changes in category titles for the 15 leading causes of death are as follows:

International Classification of Diseases, Ninth Revision (1979 to date):	*International Classification of Diseases, Eighth Revision* (1968-1978):
accidents and adverse conditions	accidents
chronic obstructive pulmonary diseases and allied conditions	bronchitis, emphysema, and asthma
pneumonia and influenza	influenza and pneumonia
chronic liver diseases and cirrhosis	cirrhosis of liver
atherosclerosis	arteriosclerosis
certain conditions originating in the perinatal period	certain causes of mortality in early infancy
homicide and legal intervention	homicide
nephritis, nephrotic syndrome, and nephrosis	nephritis and nephrosis

The remainder of the 15 leading causes under the *Ninth Revision* retained the same titles as under the *Eighth Revision.*

[2] Age-adjusted death rates show what the level of mortality would be if there were no changes in the age composition of the population from year to year and are therefore better indicators than unadjusted rates of changes over time in the risk of dying. All age-adjusted rates mentioned in this report are adjusted to the 1940 population unless otherwise specified.

Figure 1. Age-Adjusted Rates for Major Causes of Death in the United States in 1900[a] and for Leading Causes of Death in 1982



[a]Data for 1900 are for the 10 death-registration States and the District of Columbia. This area accounted for only 26 percent of the population of the Continental United States.

[b]Cancer = malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues.

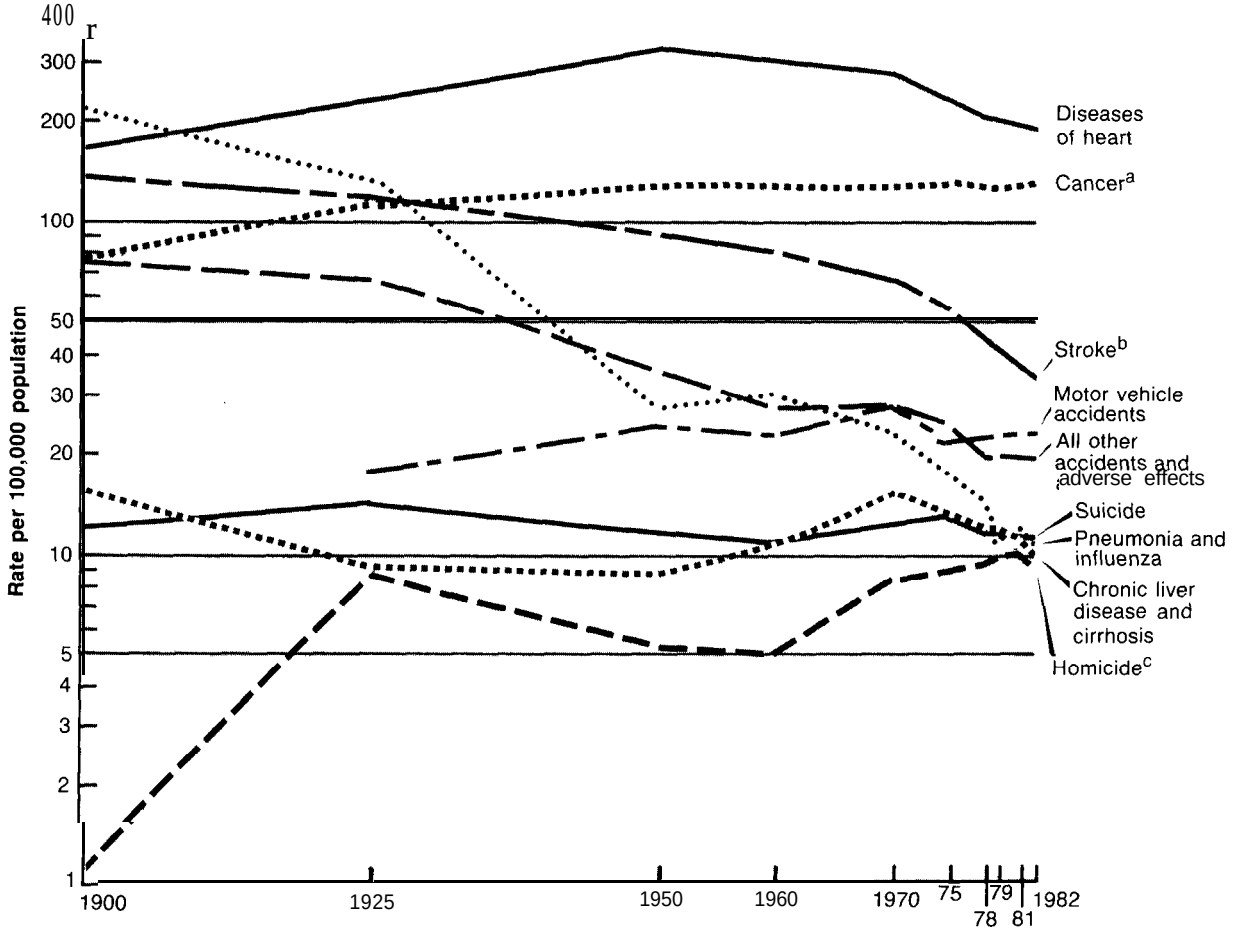
[c]Stroke = cerebrovascular diseases and allied conditions.

[d]COPD = chronic obstructive pulmonary diseases.

Notes: These charts display death rates per 100,000 population, age adjusted to the 1940 U.S. population. Numbers in parentheses indicate percentages of total age-adjusted death rate. The sum of data for the 10 causes may not equal the total because of rounding.

Source: National Center for Health Statistics.

Figure 2. Trends in Age-Adjusted Death Rates From Selected Causes: Selected Years, 1900-1982



[a]Cancer = malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues
[b]Stroke = cerebrovascular diseases.
'Homicide = homicide and legal intervention.

Note: Age adjusted to the 1940 U.S. population.

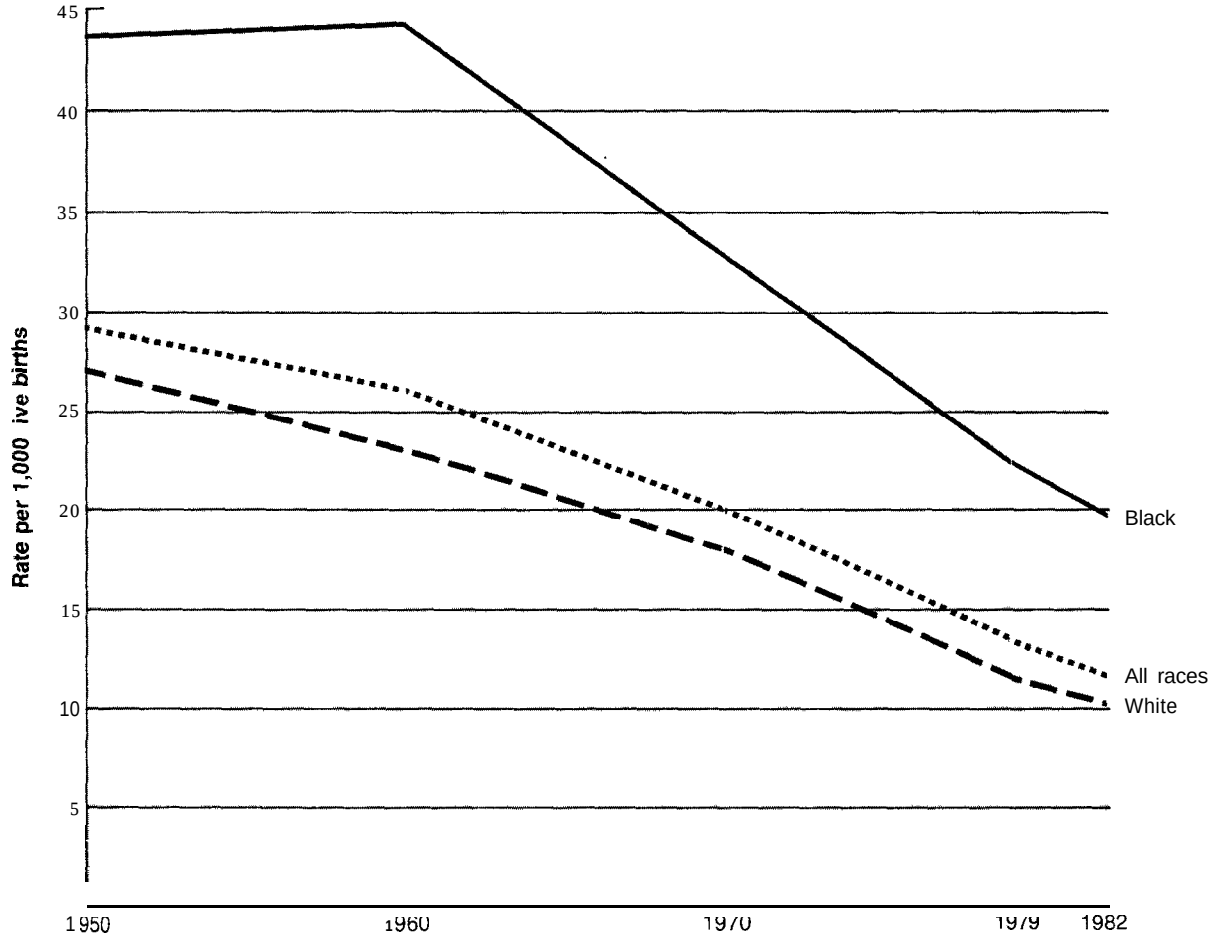
Source: National Center for Health Statistics.

Healthier Infants

The 1982 infant mortality rate of 11.5 infant deaths per 1,000 live births was the lowest rate ever recorded for the United States and represents a long-term downward trend (see Figure 3). From 1981 to 1982 the mortality rate decreased 4 percent among White infants, while among Black infants the rate decreased 2 percent. The infant mortality rate for Black infants continued to be almost twice that for White infants in 1982.

Figure 4 shows leading causes of infant deaths in 1979 and comparable rates and ranks in 1950 and 1982. The category of congenital anomalies was the leading single identifiable cause of infant deaths in 1950, 1979, and 1982, accounting for over 20 percent of infant deaths in 1982. This group of birth defects comprises those caused by developmental or genetic problems rather than injuries in utero or during birth. The leading four causes of infant death in 1982 accounted for just over half of infant deaths that year. Overall infant mortality dropped nearly 61 percent since 1950.

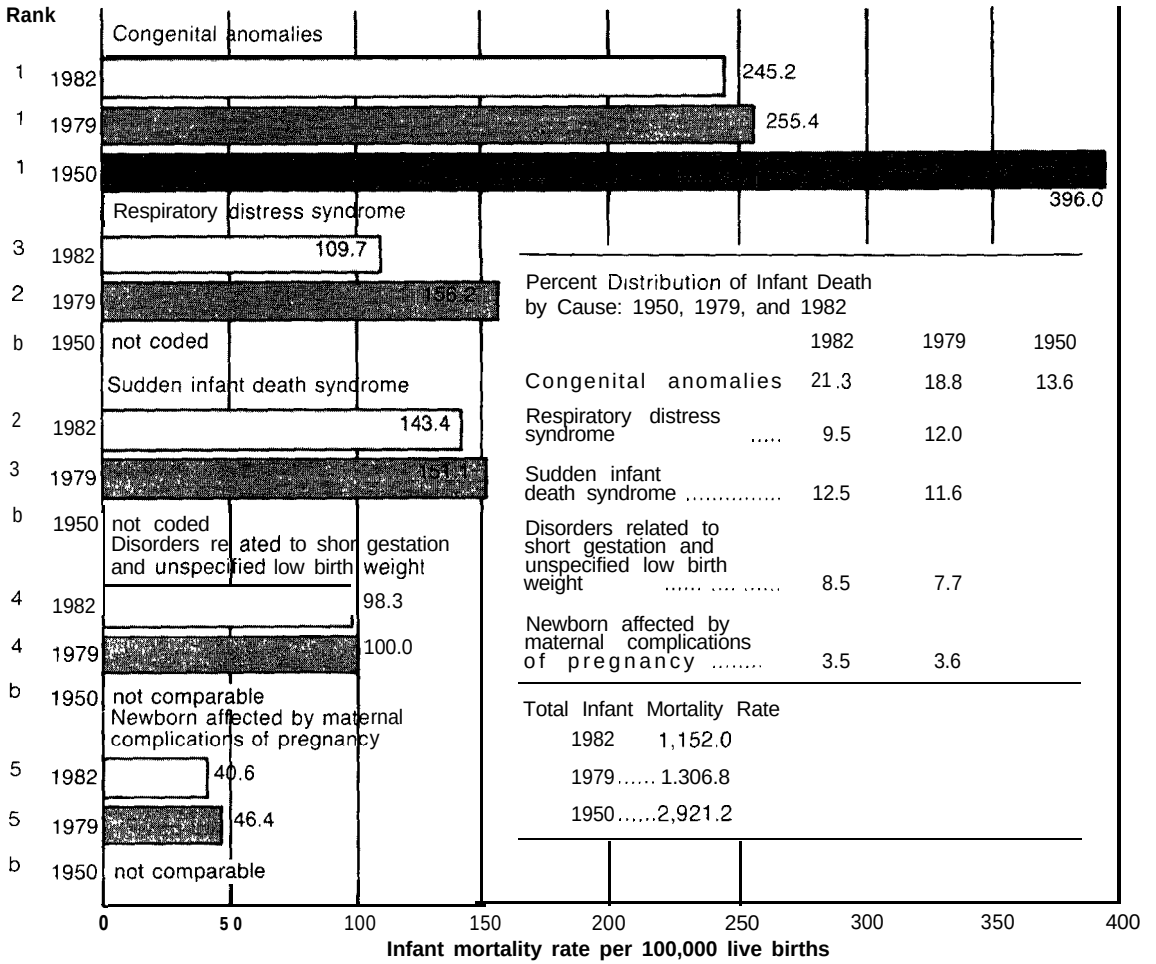
Figure 3. Infant[a] Mortality Rates, by Race: Selected Years, 1950-1982



[a]Infant = less than 1 year old.

Source: National Center for Health Statistics.

Figure 4. Leading Causes of Infant[a] Deaths: 1950, 1979, and 1982



Percent Distribution of Infant Death by Cause: 1950, 1979, and 1982

	1982	1979	1950
Congenital anomalies	21.3	18.8	13.6
Respiratory distress syndrome	9.5	12.0	
Sudden infant death syndrome	12.5	11.6	
Disorders related to short gestation and unspecified low birth weight	8.5	7.7	
Newborn affected by maternal complications of pregnancy	3.5	3.6	

Total Infant Mortality Rate

1982 1,152.0

1979 1.306.8

1950 2,921.2

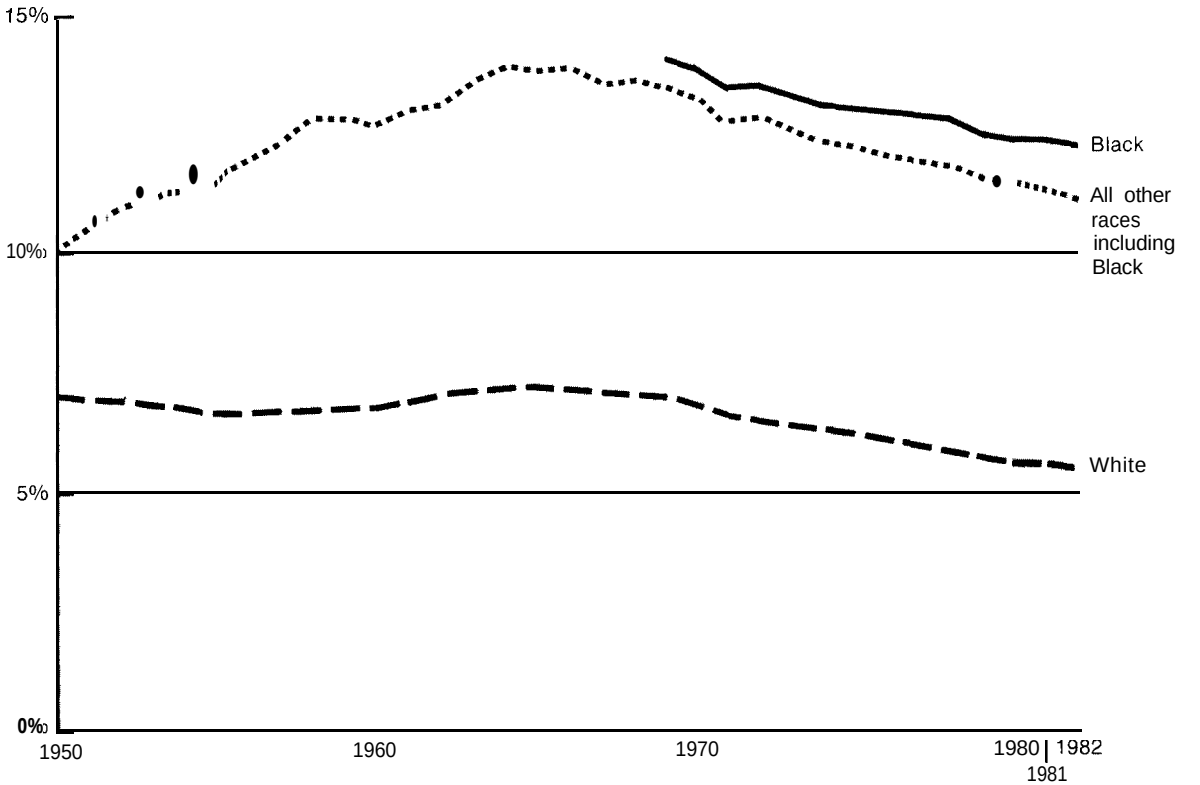
[a]Infant = less than 1 year old. [b]Not ranked in the first 10 leading causes of death.

Note: This figure shows rates for leading causes of infant deaths in 1979 and comparable rates and ranks for 1950 and 1982.

Source: National Center for Health Statistics.

The proportion of low birth weight infants-those newborn infants weighing 2,500 grams (5 pounds 8 ounces) or less-is a measure probably best correlated with deaths from immaturity and other birth-associated conditions. Although trends in percentages of infants of low birth weight have been gradually declining since a peak in 1965 and 1966, large disparities in percentages of low birth weight infants persist among the races (see Figure 5). These disparities underscore the special importance of addressing this problem among Black women of childbearing age. Lack of prenatal care, poor nutrition, smoking, alcohol and drug use, age, race, and social and economic background are among the maternal factors associated with low birth weight and the target of current prevention efforts.

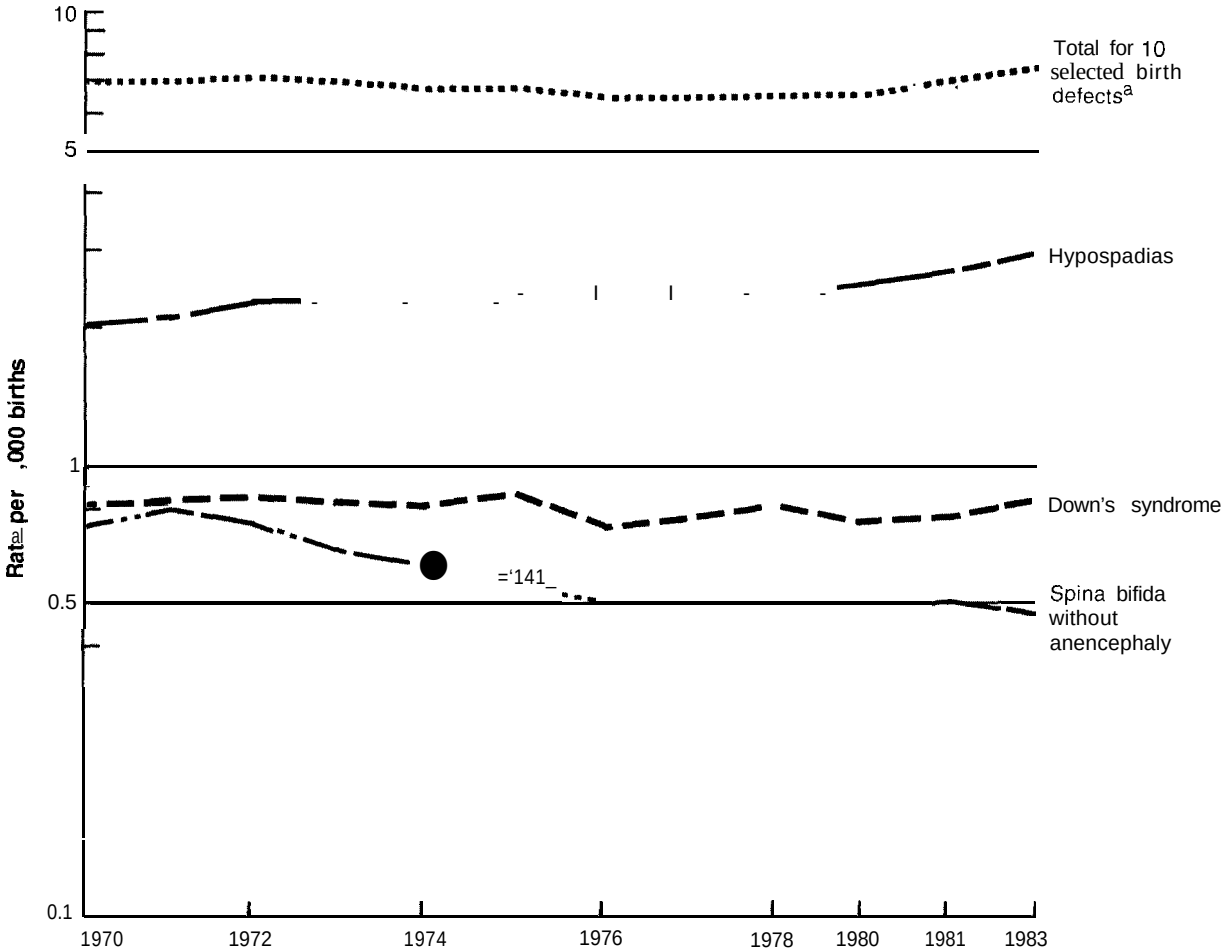
Figure 5. Percentage of *Infants*[a] of Low Birth Weight, by Race: 1950-1982



[a]Infant = less than 1 year old.

Source: National Center for Health Statistics.

Figure 6. Trends in Reported Incidence Rates of 10 Selected Birth Defects: Selected Years, 1970-1983



[a] "Selected defects" are the following 10 defects, which were selected from among those tracked by the Centers for Disease Control Birth Defects Monitoring Program: anencephaly, spina bifida without anencephaly, hydrocephalus without spina bifida, cleft palate without cleft lip, total cleft lip, tracheoesophageal fistula, rectal atresia and stenosis, hypospadias. reduction deformity, and Down's syndrome. Individual births are counted more than once if more than one defect is reported.

Source: Centers for Disease Control

It is estimated that between 1970 and 1982 the total number of birth defects reported for the 10 most common types of defects showed little change (see Figure 6). For some birth defects, spina bifida without anencephaly, for example, there was a decline during the 1970s while for others, such as hypospadias, there was a small increase. That infant mortality rates from birth defects have fallen over this same period while the incidence of birth defects has not reflects advances in neonatology, delivery techniques, urgent care of newborns, and special surgical methods.

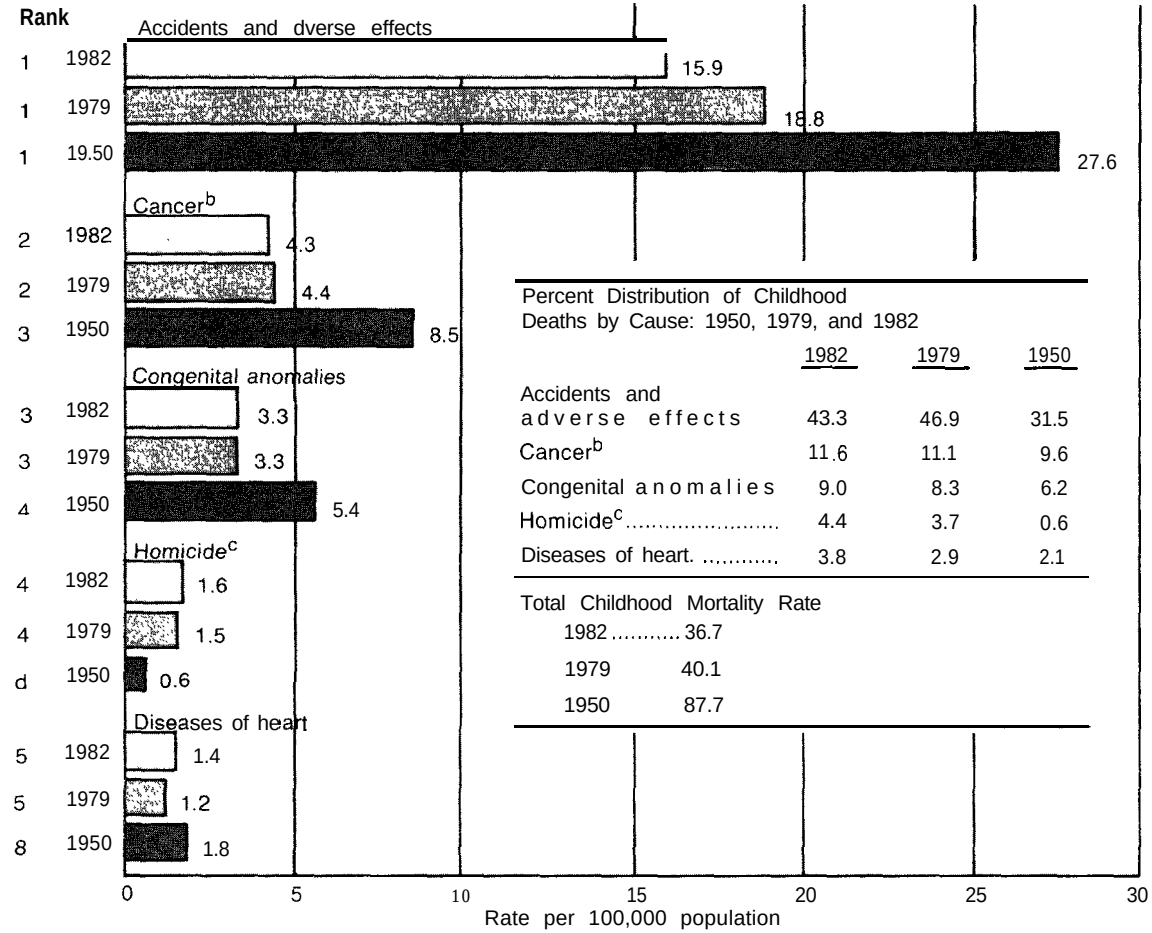
Prevention activities directed toward reducing birth defects include immunization against rubella (German measles) to prevent occurrence of the disease during early pregnancy; genetic counseling for parents at high risk of having infants with birth defects; public education campaigns to emphasize hazards to the fetus presented by alcohol, drugs, and tobacco; and special attention given to identification of toxic exposures that might injure the developing fetus.

Healthier Children

From 1950 to 1982 the death rate for children 1 to 14 years old fell from 88 to 37 per 100,000 population, a reduction of 58 percent. The change in rates for particular causes of death has varied widely in both magnitude and direction since 19.50 (see Figure 7).

Pneumonia and influenza-ranked as the second leading cause of death in 1950—is no longer among the top five causes of death. Improvements in access to health care and in living conditions for low-income and minority groups have been important contributors to this reduction, along with advances in medical treatment and in prevention through immunization. Since 1950, impressive reductions in death rates among children have also occurred for cancer, which has shown a 49 percent decline in incidence rate between 1950 and 1982. This reduction is largely attributable to improvements in treatment of childhood leukemia, lymphoma, and Hodgkin's disease.

Figure 7. Leading Causes of Childhood[a] Deaths: 1950, 1979, and 1982



Percent Distribution of Childhood Deaths by Cause: 1950, 1979, and 1982

	1982	1979	1950
Accidents and adverse effects	43.3	46.9	31.5
Cancer[b]	11.6	11.1	9.6
Congenital anomalies	9.0	8.3	6.2
Homicide[c]	4.4	3.7	0.6
Diseases of heart	3.8	2.9	2.1

Total Childhood Mortality Rate

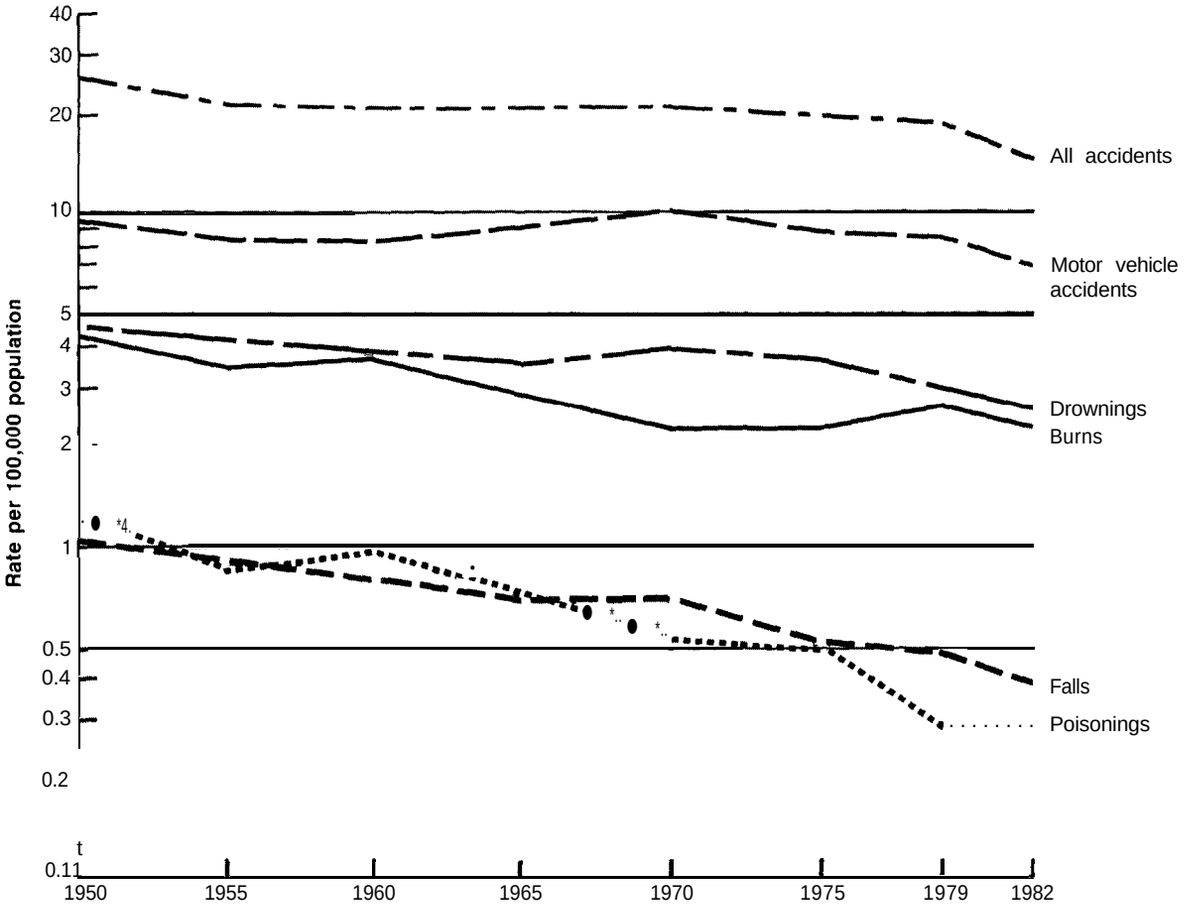
1982	36.7
1979	40.1
1950	87.7

[a]Childhood = l-14 years old. [b]Cancer = malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues. 'Homicide = homicide and legal intervention. [d]Not ranked in the first 10 leading causes of death.

Note: This figure shows rates for leading causes of childhood deaths in 1979 and comparable rates and ranks for 1950 and 1982.

Source: National Center for Health Statistics.

Figure 8. Trends in Accidental Death Rates for Children,[a] From Selected Causes: Selected Years, 1950-l 982



[a]Children = 1-14 years old.

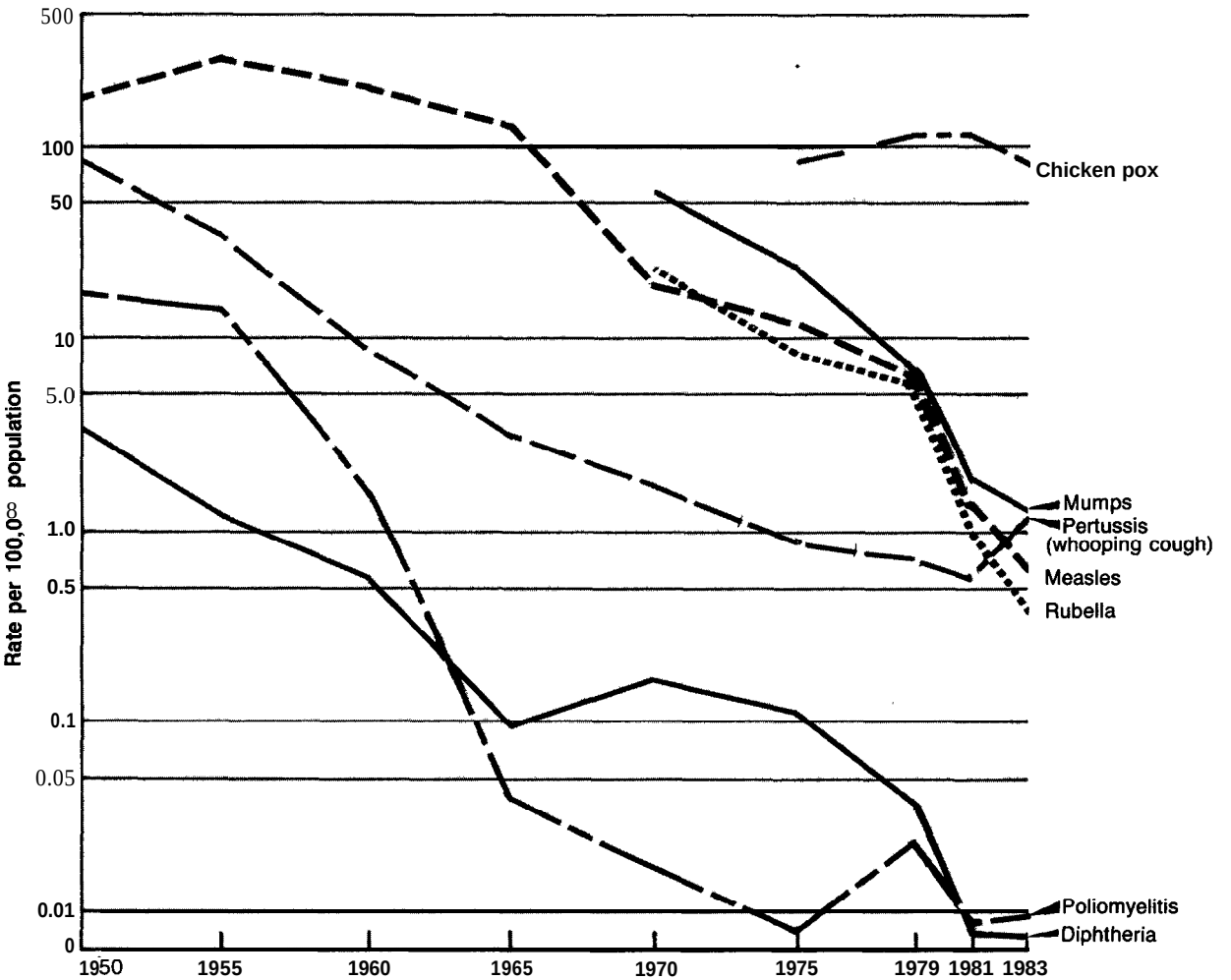
Source: National Center for Health Statistics.

Of increasing incidence is homicide, which in 1950 was not ranked in the first 10 leading causes of death, but in 1982 was ranked as the fourth leading cause of death for children. Accidents are still the single largest cause of death among children 1 to 14, though between 1950 and 1982 accidents declined 42 percent-from 28 to 16 per 100,000 population (see Figure 8). Motor vehicle accidents accounted for almost half the accidental deaths in this age group in 1982.

Other major causes of accidental deaths which have dropped since 1950 are burns, falls, and poisonings. The death rate for drownings has remained comparatively constant (see Figure 8). Alcohol is a significant factor in many of these accidental deaths; cigarette smoking is a factor in many fire-related deaths; and a substantial proportion of drownings occur in unattended bodies of water. A major challenge for the 1980s is to find effective measures for reducing motor vehicle fatalities for children while continuing our efforts to control the other causes of accidental deaths.

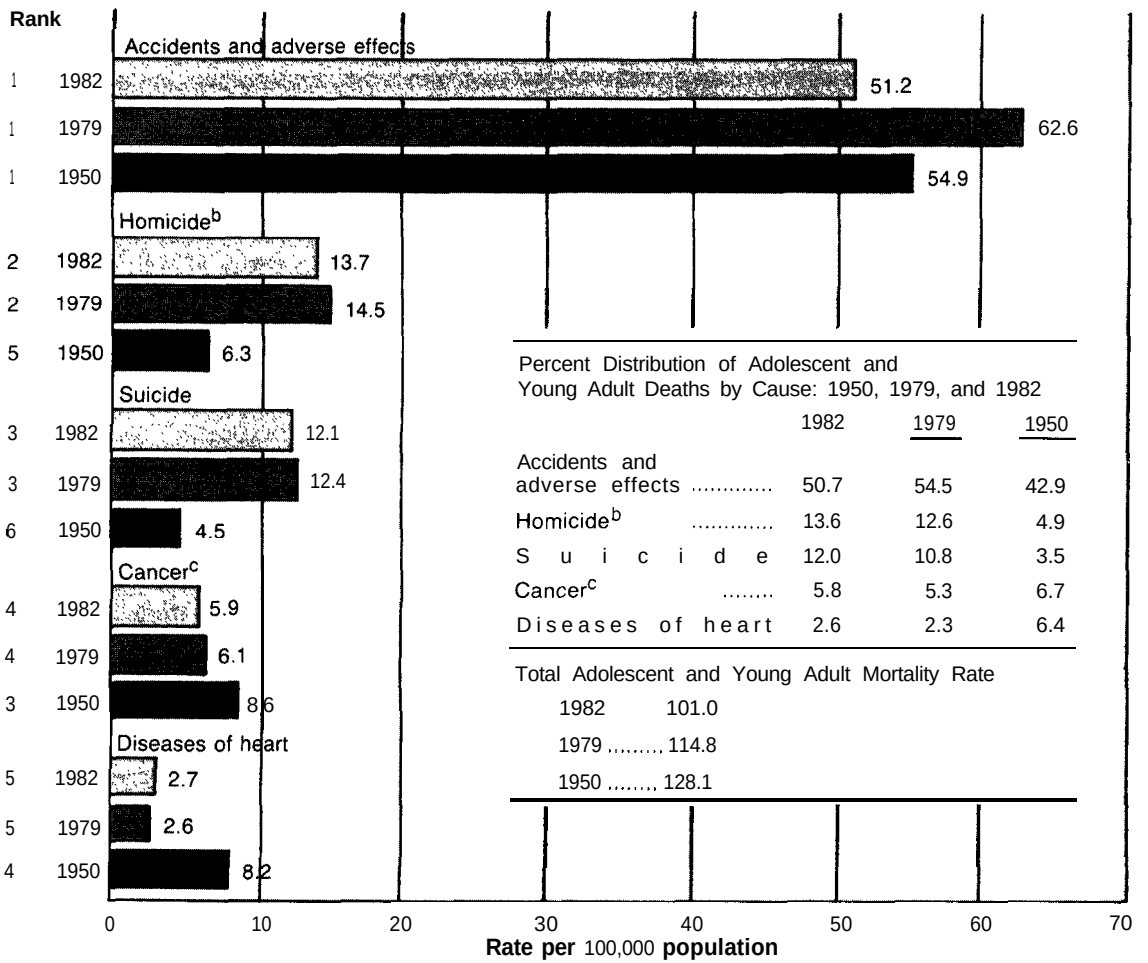
One major target of the national prevention program is the incidence of childhood vaccine-preventable diseases (see Figure 9). The reduced incidence of these diseases reflects the successes of childhood immunization programs. In 1983, 94.6 percent of U.S. counties were measles **free, 76.9 percent were mumps** free, and 91 percent were rubella free. In 1982 and 1983, all 21 cases of poliomyelitis were vaccine associated, that is, not due to wild virus. Occasional short-term reversals of trends underscore the need for achieving the highest possible immunization levels for young children. Maternal immunization education programs in hospitals and accelerated vaccine-related research are strong contributors to the effectiveness of this prevention effort.

Figure 9. Trends in Reported Incidence Rates of Childhood Infectious Diseases: Selected Years, 1950-I 983



Source: Centers for Disease Control.

Figure 10. Leading Causes of Adolescent and Young Adult[a] Deaths: 1950, 1979, and 1982



Percent Distribution of Adolescent and Young Adult Deaths by Cause: 1950, 1979, and 1982

	1982	1979	1950
Accidents and adverse effects	50.7	54.5	42.9
Homicide[b]	13.6	12.6	4.9
Suicide	12.0	10.8	3.5
Cancer[c]	5.8	5.3	6.7
Diseases of heart	2.6	2.3	6.4

Total Adolescent and Young Adult Mortality Rate

1982 101.0
1979 114.8
1950 128.1

[a]Adolescents and young adult = 15-24 years old. [b]Homicide = homicide and legal intervention. [c]Cancer = malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues.

Note: This figure shows rates for leading causes of death among adolescents and young adults in 1979 and comparable rates and ranks for 1950 and 1982.

Source: National Center for Health Statistics.

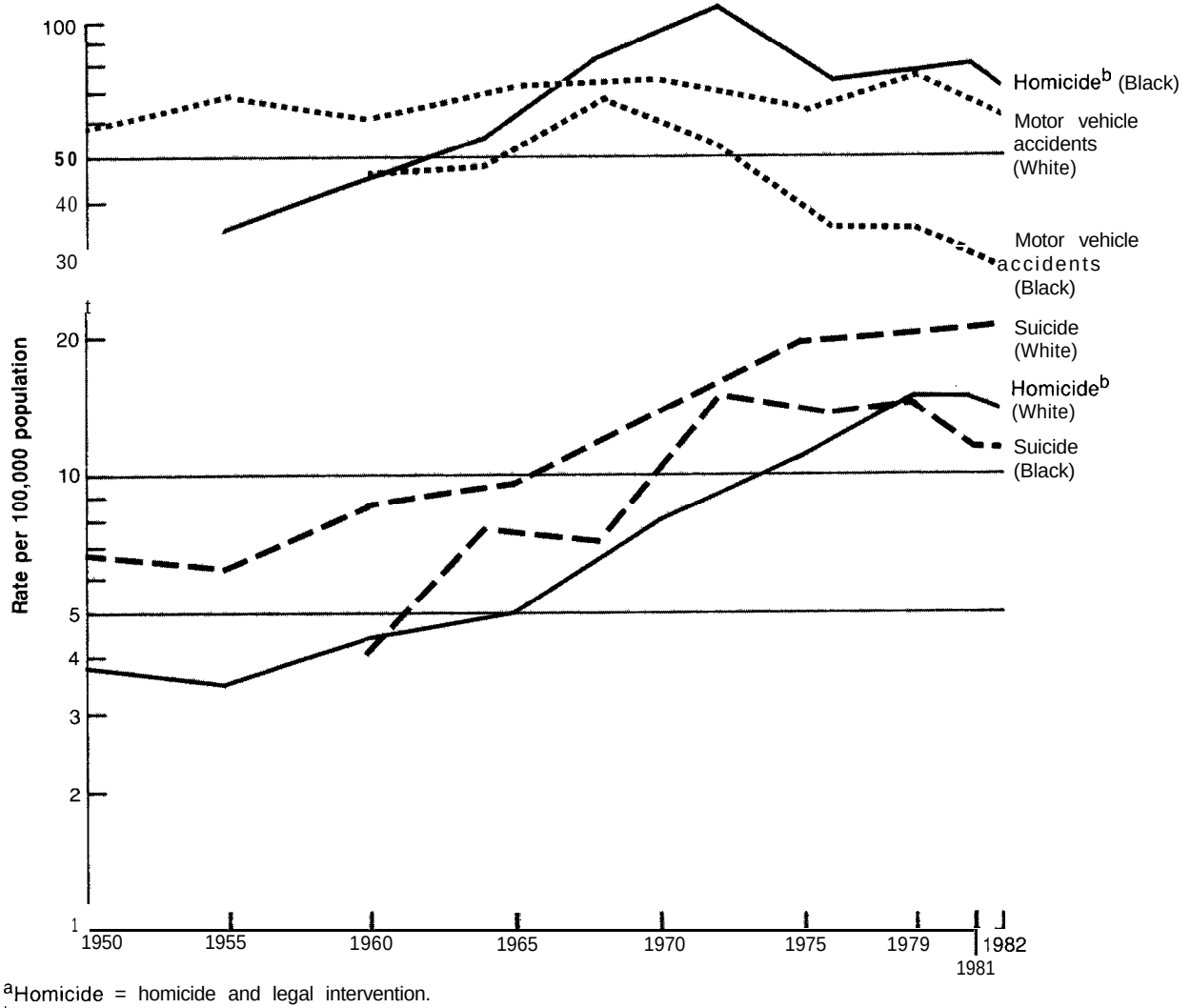
Healthier Adolescents and Young Adults

Since 1950 the overall death rate for 15- to 24-year-olds has declined about 21 percent, while the changes in death rates for the various causes have varied widely (see Figure 10). As with children, the single largest cause of death in this age range is accidents, although the rate of deaths caused by accidents-after peaking in 1978 at 64.5 per 100,000 population-has as of 1982 declined to a rate slightly below the 1950 rate, Among adolescents and young adults, motor vehicle accidents account for more than 70 percent of all accidental deaths. For young people, death rates for infectious diseases, cancer, and heart disease declined, but death rates for suicide and homicide increased between 1950 and 1982.

Death rates for motor vehicle accidents, homicide, and suicide differ by sex and race among adolescents and young adults (see Figures 11 and 12). For White males, motor vehicle death rates rose from 1960 through 1979, except for a small dip between 1973 and 1975 attributable to enforcement of lower speed limits during the gasoline shortage. In 1981 and 1982, however, the rate declined slightly. Between 1972 and 1982 there has been an 18 percent decrease in the rate of motor vehicle accidents for 15- to 24-year-old White males. The decrease for Black males and males of all other races including Blacks during this same time frame was approximately 45 percent.

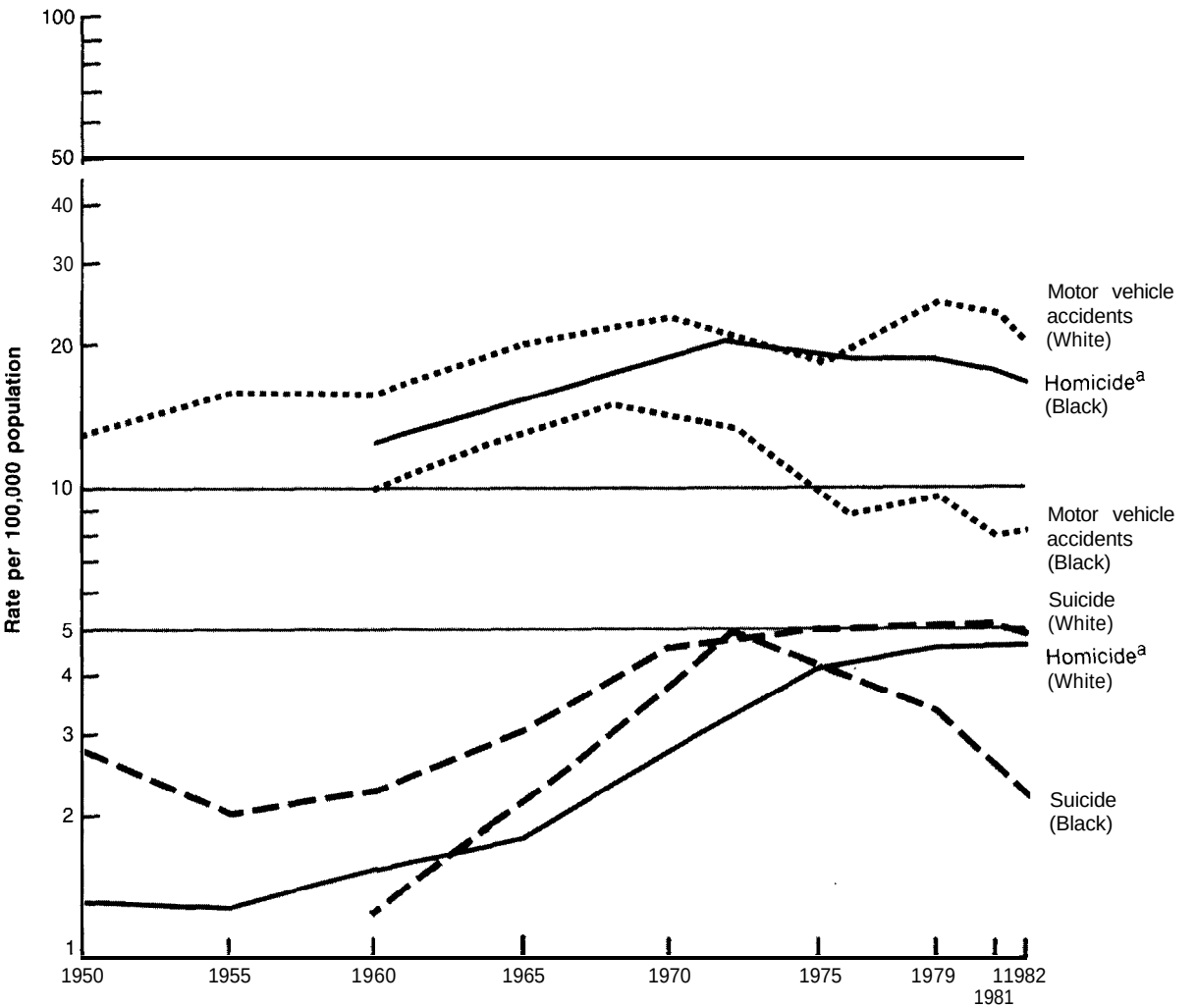
In 1982 motor vehicle accident deaths among 15- to 24-year-old White males outnumbered suicides by four to one and homicides by six to one. However, since the middle 1960s, homicide death rates among 15- to 24-year-old non-White males have exceeded death rates for motor vehicle accidents. For Black males of this age, homicide rates peaked in 1971 at 108.2 homicide deaths per 100,000 population. Since then, homicide death rates for Black male youths have fallen approximately 33 percent.

Figure 11. Trends in Death Rates for Suicide, Homicide,= and Motor Vehicle Accidents Among Adolescent and Young Adult[b] Males, by Race: Selected Years, 1950-1982



[a]Homicide = homicide and legal intervention.
[b]Adolescent and young adult = 15-24 years old
Source: National Center for Health Statistics.

Figure 12. Trends in Death Rates for Suicide, Homicide,[a] and Motor Vehicle Accidents Among Adolescent and Young Adult[b] Females, by Race: Selected Years, 1950-1982



[a]Homicide = homicide and legal intervention.
[b]Adolescent and young adult = 15-24 years old.

Source: National Center for Health Statistics.

Homicide death rates among 15- to 24-year-old White males have increased sharply since 1955, although the 1982 rate for this group is slightly lower than the 1981 rate. The homicide rate for this age group in 1982 for all other races including Black was almost 5 times higher than the rate for Whites. Suicide rates for non-Whites peaked in 1972 but from 1972 to 1982 showed a 25 percent decrease, while during this same time the suicide rates for 15- to 24-year-old White males increased 38 percent.

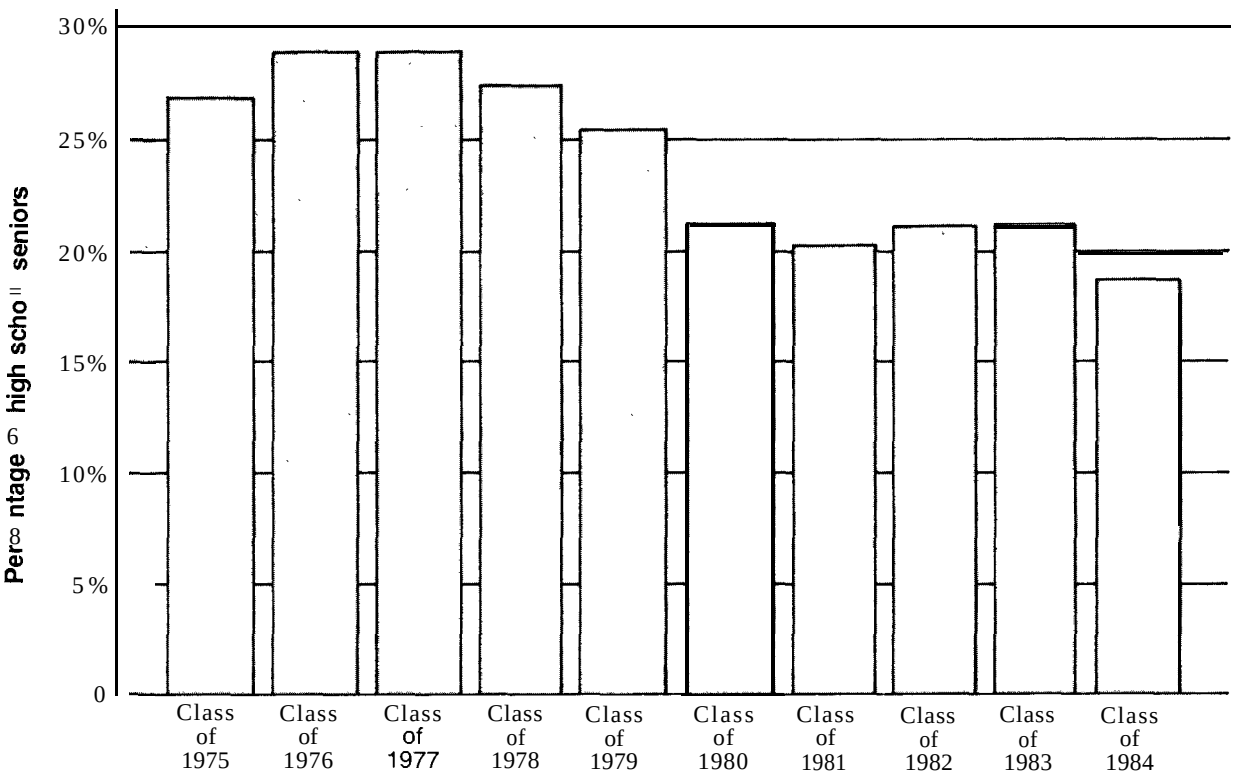
Among 15- to 24-year-old females, the overall 1983 death rate was only one third that of males. The 1982 rate of death for motor vehicle accidents for 15- to 24-year-old females was about a third the rate for males of this age group, and for homicide and suicide, about one fourth the rate for males (see Figure 12).

In 1982 homicide deaths of 15- to 24-year-old Black females occurred at a rate almost 3.5 times the rate for White females of this age group, while 15- to 24-year-old White females committed suicide and died in motor vehicle accidents at rates double the rates for Black females of this age.

Because many habits and lifestyle patterns evident in young adults may have pronounced implications for their future health, much effort has been directed toward prevention of less healthful habits and patterns. Smoking, alcohol consumption, and illicit drug use are three of the most prominent target prevention areas.

Data on smoking among high school seniors indicate a 35 percent reduction between 1976-1977 and 1984 in the percentage of seniors in school who smoke (see Figure 13). These data also show a 12 percent reduction just recently-from 1983 to 1984. The large drop in the percentage of high school seniors who smoke may attest to the effectiveness of education and information campaigns that focus on warning teenagers of the dangers of starting to smoke or continuing to smoke.

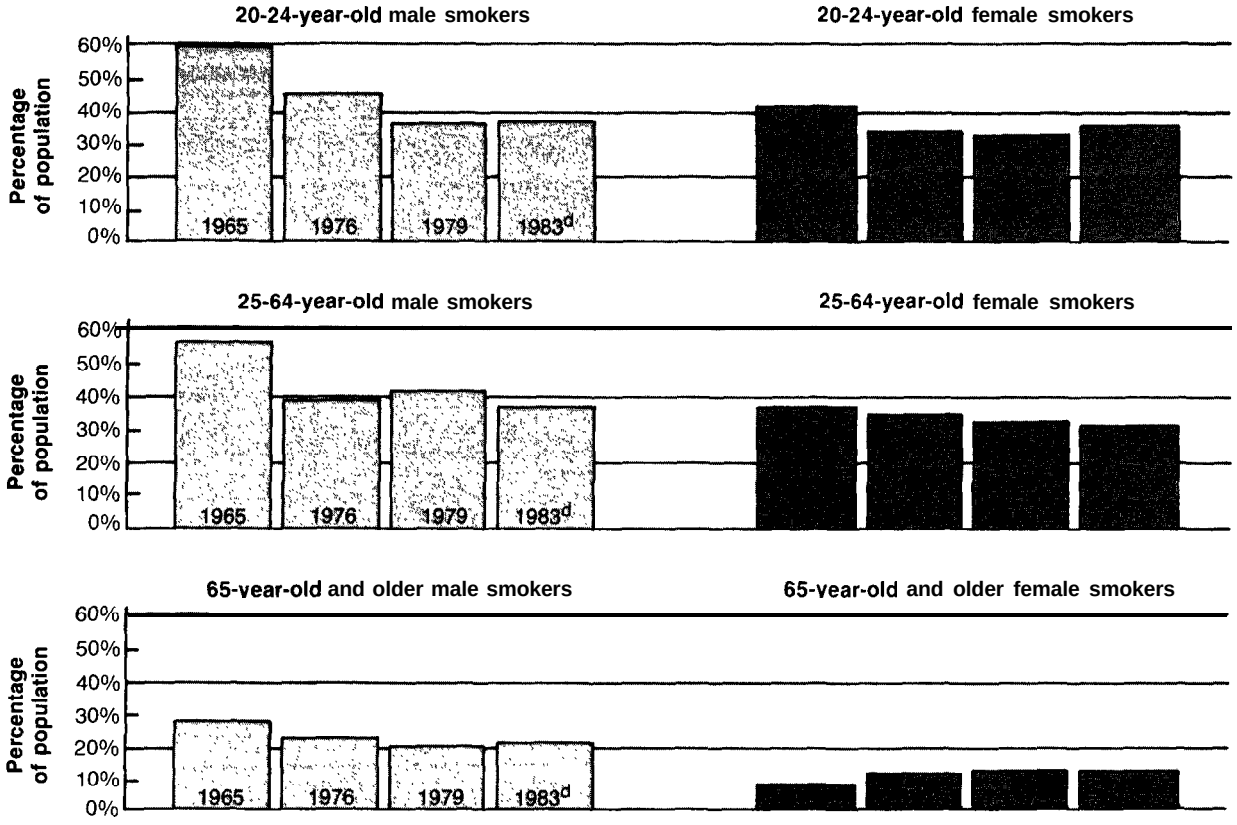
Figure 13. Cigarette Smoking Among High School Seniors, 1975-1984



Note: A current smoker is one who has smoked daily in the past 30 days.

Source: High School Seniors Survey of the National Institute on Drug Abuse

Figure 14. Cigarette Smoking Among Young Adults,[a] Adults,[b] and Older Adults,[c] by Sex: 1965, 1976, 1979, and 1983



[a]Young Adults = 20-24 years old.

[b]Adults = 25-64 years old.

[c]Older adults = 65 years and older.

[d]Provisional data.

Note: A smoker is a person who has smoked at least 100 cigarettes and who now smokes; includes occasional smokers

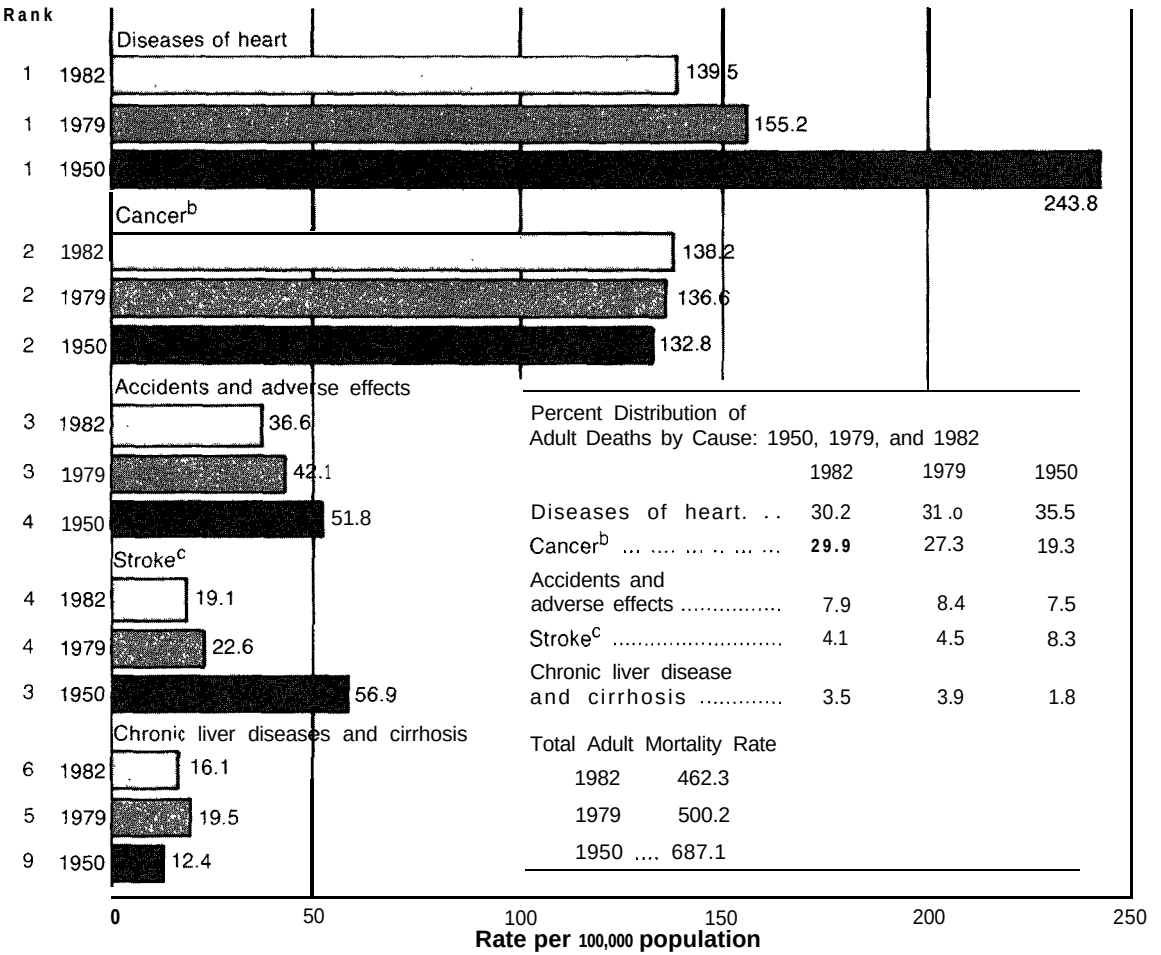
Source: National Center for Health Statistics.

There has been a major decline in cigarette smoking among adults since the first *Surgeon General's Report on Smoking and Health* was released in 1964. The slight increase in smoking in recent years among young adult (20- to 24-year-old) females reflects the relatively sharp rise in smoking among teenage females during the mid-to-late 1970s, a *trend* that has *now been* reversed. A major pattern in smoking behavior that has emerged over the past two decades is a convergence of the proportion of smokers in each of the sexes and age groups (see Figure 14). There is now almost no difference in the proportion of smokers between young adult males and females.

Healthier Adults

Until recently, the three leading causes of death among 25- to 64-year-old adults were heart disease, cancer, and stroke. Since 1950, death rates for stroke and heart disease have been declining for all ages combined, and, as of 1982, for adults there has been a 43 percent reduction for heart disease and a 66 percent reduction for stroke (see Figure 15). As a result, stroke has dropped from the third leading cause of mortality for this age group in 1950 to the fourth leading cause in 1979 and 1983; accidents have become collectively the third leading cause of mortality for this age group. During this same time period (1950–1982), cancer death rates increased 4 percent; accidental death rates fell 29 percent; and death rates attributed to cirrhosis of the liver increased by 30 percent.

Figure 15. Leading Causes of Adult[a] Deaths: 1950, 1979, and 1982



Percent Distribution of Adult Deaths by Cause: 1950, 1979, and 1982

	1982	1979	1950
Diseases of heart. . .	30.2	31 .o	35.5
Cancer[b]	29.9	27.3	19.3
Accidents and adverse effects	7.9	8.4	7.5
Stroke[c]	4.1	4.5	8.3
Chronic liver disease and cirrhosis	3.5	3.9	1.8

Total Adult Mortality Rate

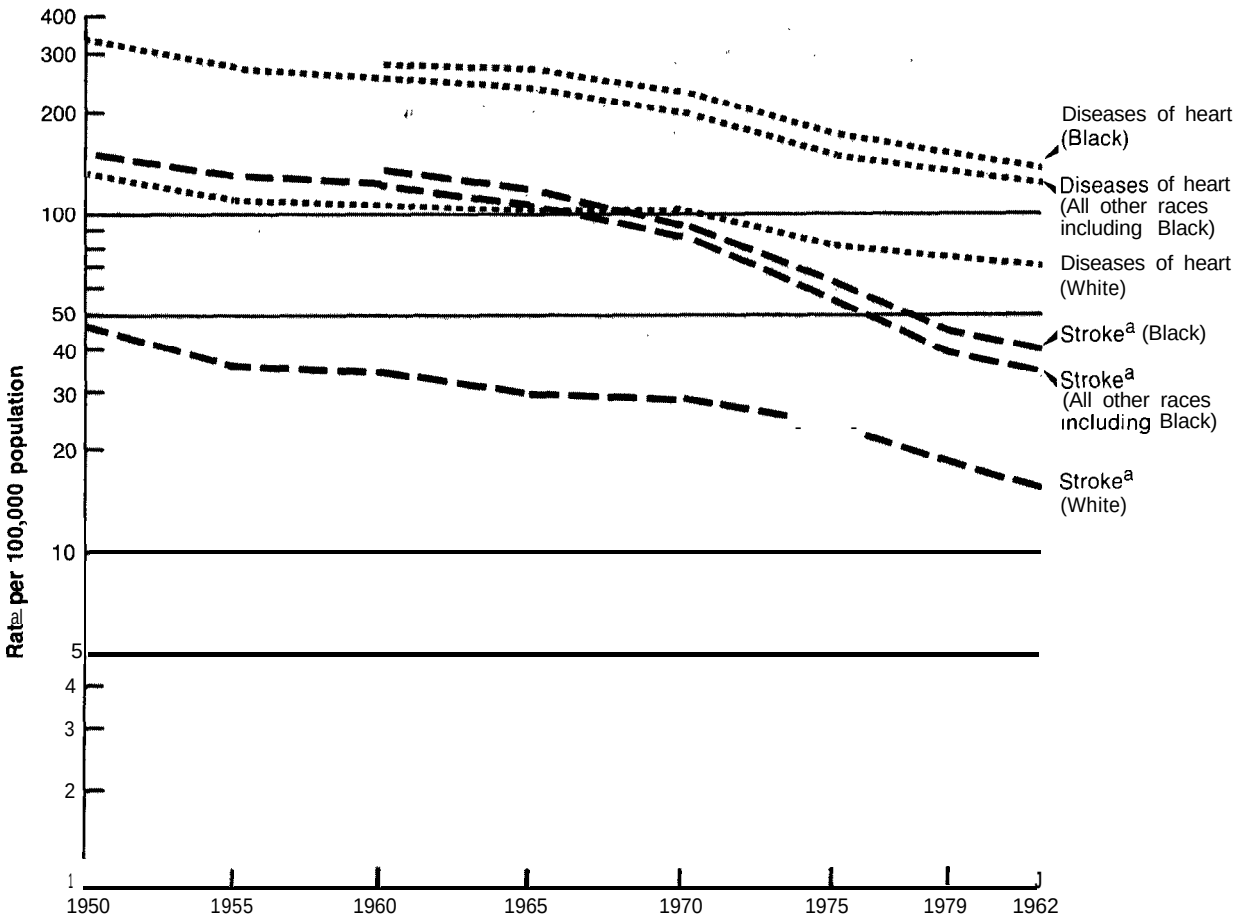
1982	462.3
1979	500.2
1950	687.1

[a]Adult = 25-64 years old. [b]Cancer = malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues. 'Stroke = cerebrovascular diseases.

Note: This figure shows rates for leading causes of adult deaths in 1979 and comparable rates and ranks for 1950 and 1982.

Source: National Center for Health Statistics

Figure 16. Trends in Death Rates for Diseases of Heart and Stroke[a] Among Adult[b] Females, by Race: Selected Years, 1950-l 982



[a]Stroke =cerebrovascular diseases.
[b]Adult = 25-64 years old.

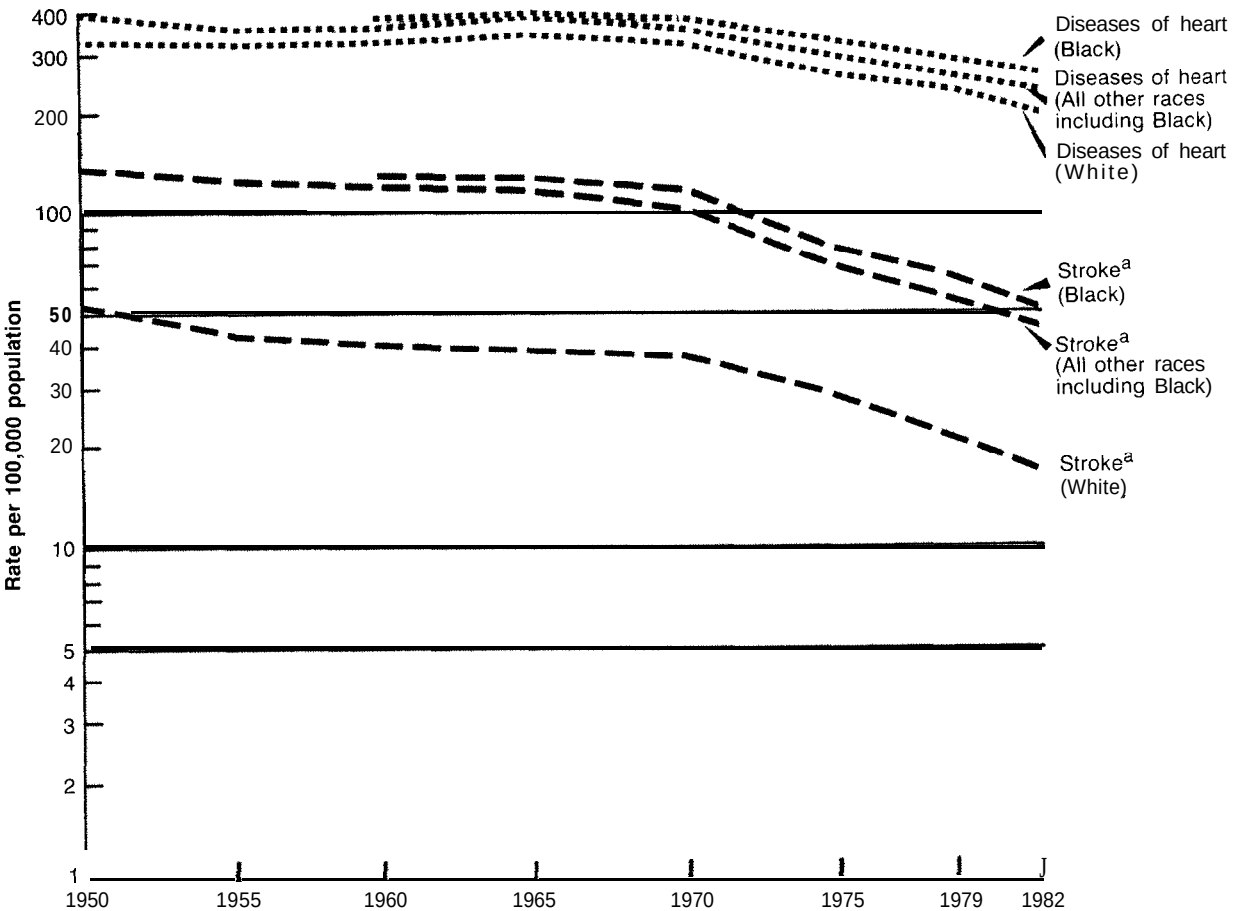
Source: National Center for Health Statistics.

Heart disease death rates for Black women and for non-White women (including Black) are nearly twice those for White women, although rates for both groups are declining (see Figure 16). Among men the rates differ between races much less dramatically, but are at levels substantially higher than those for females: White male death rates from heart disease are 2.9 times those for White females, and for Black males and non-White males (including Black), the rates are 1.9 times those for the respective female groups (see Figure 17).

For stroke, large differences in mortality are associated with race, with Blacks having death rates up to 2.9 times those for Whites. The differences between death rates for men and women are small but consistent, with women having the lower rates of death from stroke.

Prevention activities likely to result in further decreases in heart disease and stroke incidence are those related to risk factor reduction (smoking, diet, physical activity, and obesity) and control of high blood pressure. At the same time, technology should continue to reduce the mortality rates for those already affected by the disease.

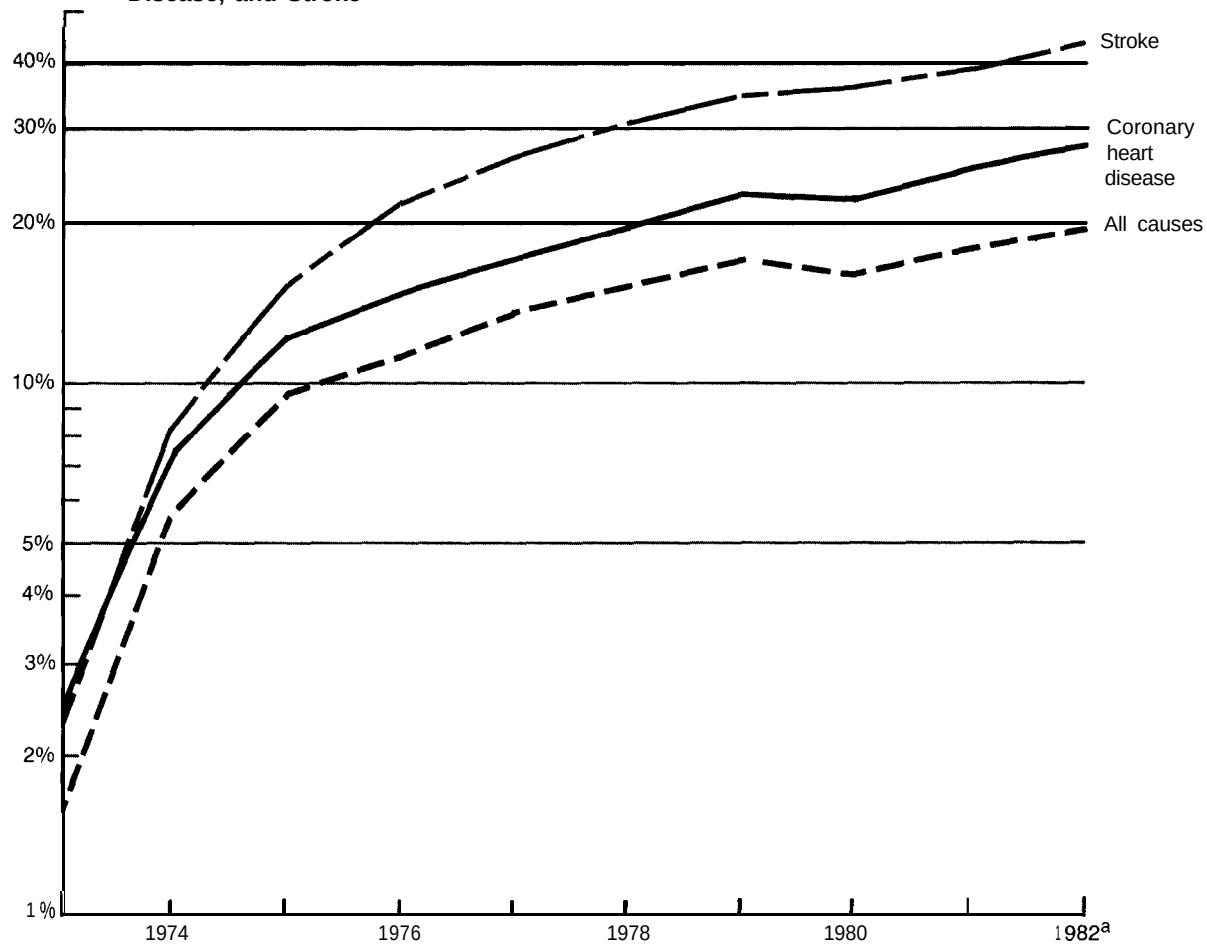
Figure 17. Trends in Death Rates for Diseases of Heart and Stroke[a] Among Adult[b] Males, by Race: Selected Years, 1950-l 982



[a]Stroke = cerebrovascular diseases
[b]Adult = 25-64 years old.

Source: National Center for Health Statistics

Figure 18. Percent Decline Since 1972 in Age-Adjusted Death Rates for All Causes, Coronary Heart Disease, and Stroke



[a]Provisional data.

Note: Age-adjusted to 1940 U.S. population.

Source: National Heart, Lung, and Blood Institute.

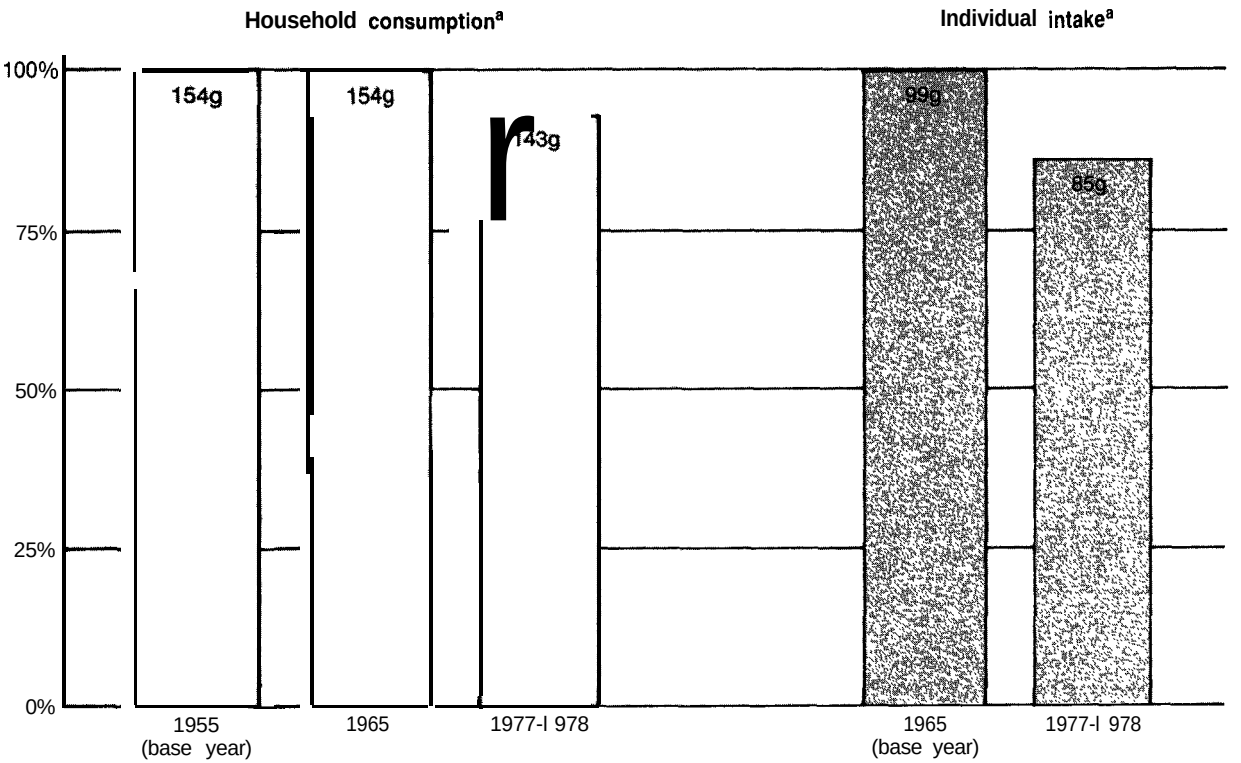
In 1980, about 60 million Americans were at increased risk of illness and premature death due to elevated blood pressure. Since 1972, when a national effort to increase hypertension control was initiated, the age-adjusted stroke death rate has declined nearly 5 percent each year, and it continues to fall. Mortality from stroke has declined almost 43 percent since 1972, and coronary heart disease has dropped 27 percent in this time period (see Figure 18).

A great deal of progress has been made in the control of high blood pressure and in the provider's and the public's awareness of the condition, its principal risk factors, and long-term therapies. From 1972 to 1980, the percent of hypertensive individuals who control their blood pressure increased from 16.5 percent to 34.1 percent. Surveys comparing between 1973 and 1979 the level of the public's knowledge about hypertension and its treatment indicate increases in the percent of the population who know that high blood pressure is a major likely cause of stroke and heart trouble and that cigarette smoking and cholesterol are major likely causes of heart trouble. In 1973 only 24 percent of survey respondents indicated knowing that hypertension means high blood pressure, whereas in 1982, 55 percent indicated having this knowledge. Another indicator of the public's understanding of the condition and the need for treating it is the approximately 55 percent increase from 1970 to 1982 in the number of visits to doctors for hypertension--when the number of visits for all reasons was relatively stable.

The connections between diet and good health and diet and disease are not completely understood, but researchers are studying many of those associations. For instance, we do know that individuals who have high blood cholesterol levels are at greater risk of having heart attacks than persons with moderate cholesterol levels. Many cardiovascular research scientists agree that serum cholesterol can be lowered in a substantial number of persons with high serum cholesterol by controlling the intake of dietary fat and cholesterol. Reducing high serum cholesterol by dietary means is preferable to drug therapy and may be used as a first step in management of the condition. Moderate consumption levels of fat and cholesterol have also been suggested as a general recommendation for the public, especially for persons at high risk for heart disease.

One way in which researchers study nutrition is by examining trends in food consumption levels. As estimated by the U.S. Department of Agriculture, fat consumption per household decreased by 7 percent from 1955 to 1977-1978 (see Figure 19), with the bulk of the change occurring between the 1960s and the 1970s. Nationwide Food Consumption Survey (NFCS) estimates of individual intake show an even greater percentage of change-a decrease of 14 percent over this period-whereas consumption data from the first and second National Health and Nutrition Examination Surveys (NHANES I and II) show no significant difference between total fat intake per person in 1970-1974 and 1976-1980. While the differences between NCFS and NHANES data may reflect sampling and methodology differences, they also suggest that there has been a leveling off of fat consumption by the late 1970s, and they point to the need to continue to gather standardized trend data regarding this and other dietary issues.

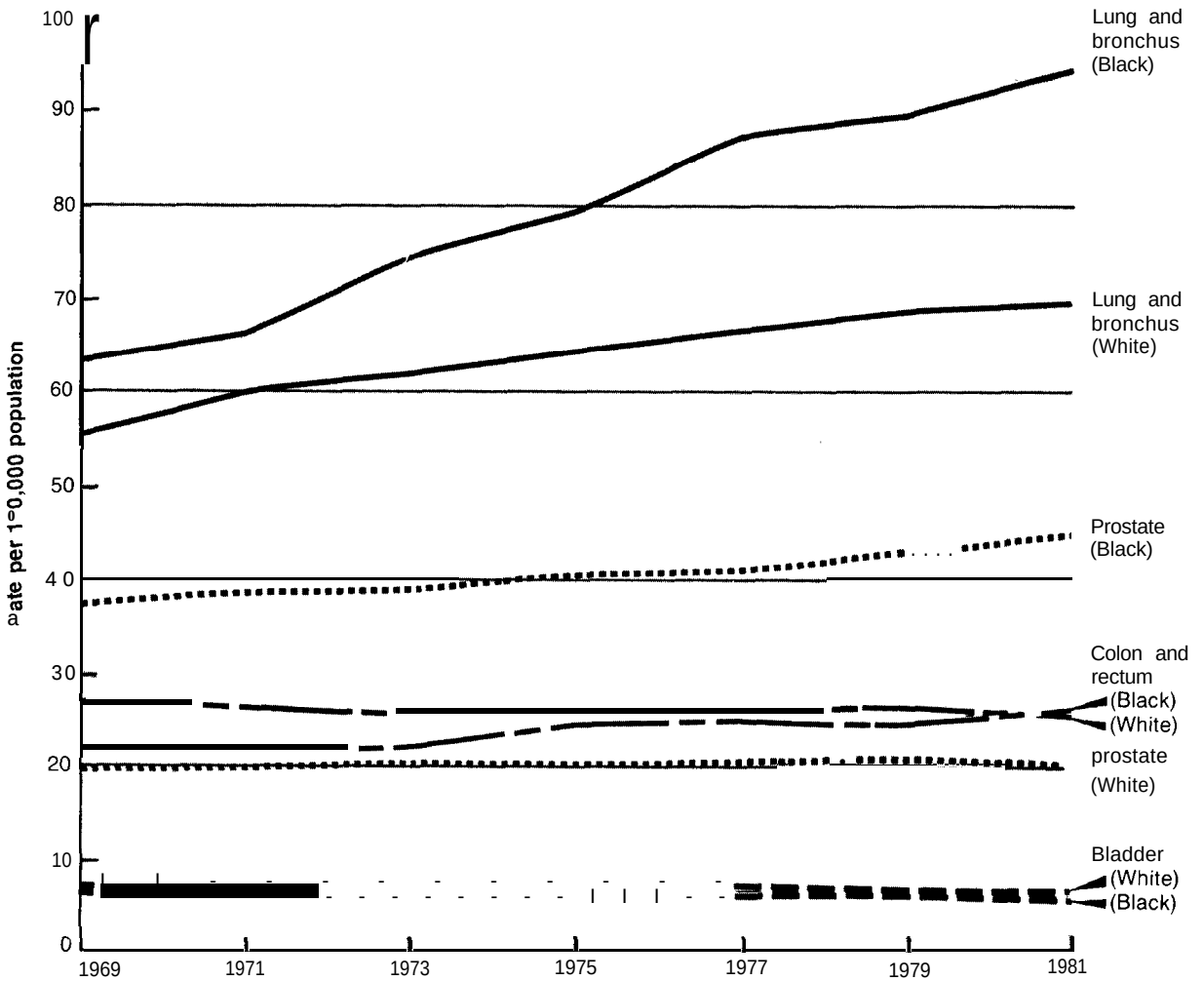
Figure 19. Percent Change in Household Consumption and Individual Intake of Total Fat: Selected Years, 1955-l 978



*Grams per person per day.

Source: USDA Nationwide Food Consumption Survey (Household and Individual).

Figure 20. Age-Adjusted Cancer Death Rates for Males, by Site and Race: Selected Years, 1969-1981



Note: Age-adjusted to 1970 US. population

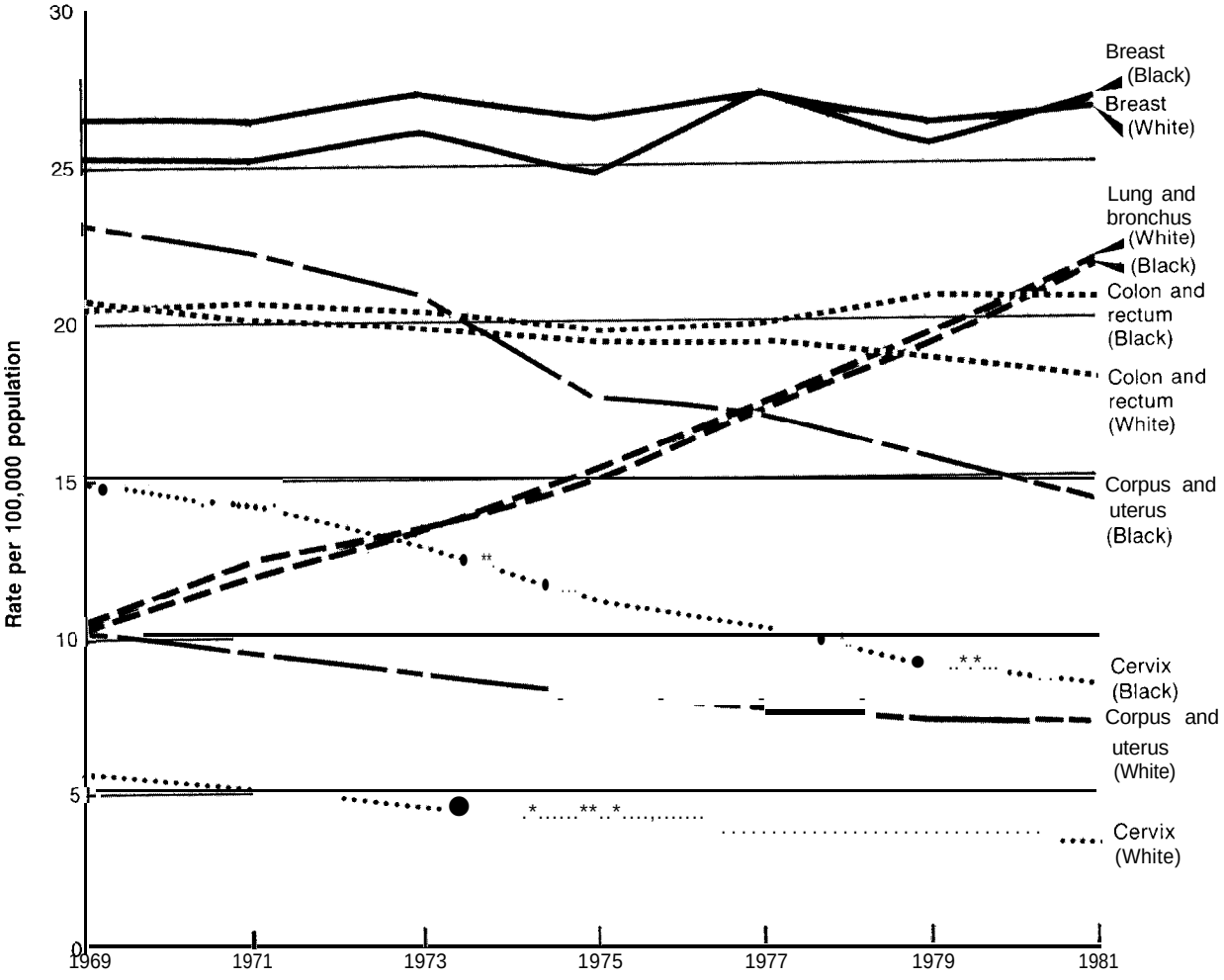
Source: National Cancer Institute.

Cancers are collectively the second leading cause of death for adults. The 1969-1981 trends in cancer mortality rates and incidence at selected body sites vary for males and females, depending upon the affected organ (see Figures 20 and 21). Because of the limited geographic coverage of the National Cancer Institute's SEER (Surveillance, Epidemiology, and End Result) Program, national incidence rates have been estimated only since 1973.

Substantial increases from 1969 to 1981 in lung cancer mortality among females-l 10 percent and 106 percent for White and Black females, respectively-reflect increased smoking by women. With the increase in lung cancer mortality, the trends in death rates from lung and breast cancers appear to be converging (Figure 21). Mortality from cancer of the cervix declined between 1969 and 1981, as did mortality from cancer of the uterine corpus.

Though some gains have been made with respect to treatment of certain cancers, prevention must be a major component of any broad strategy. Because of the long time periods over which cancer develops, the results of these prevention efforts may not be reflected immediately in declining death or incidence rates.

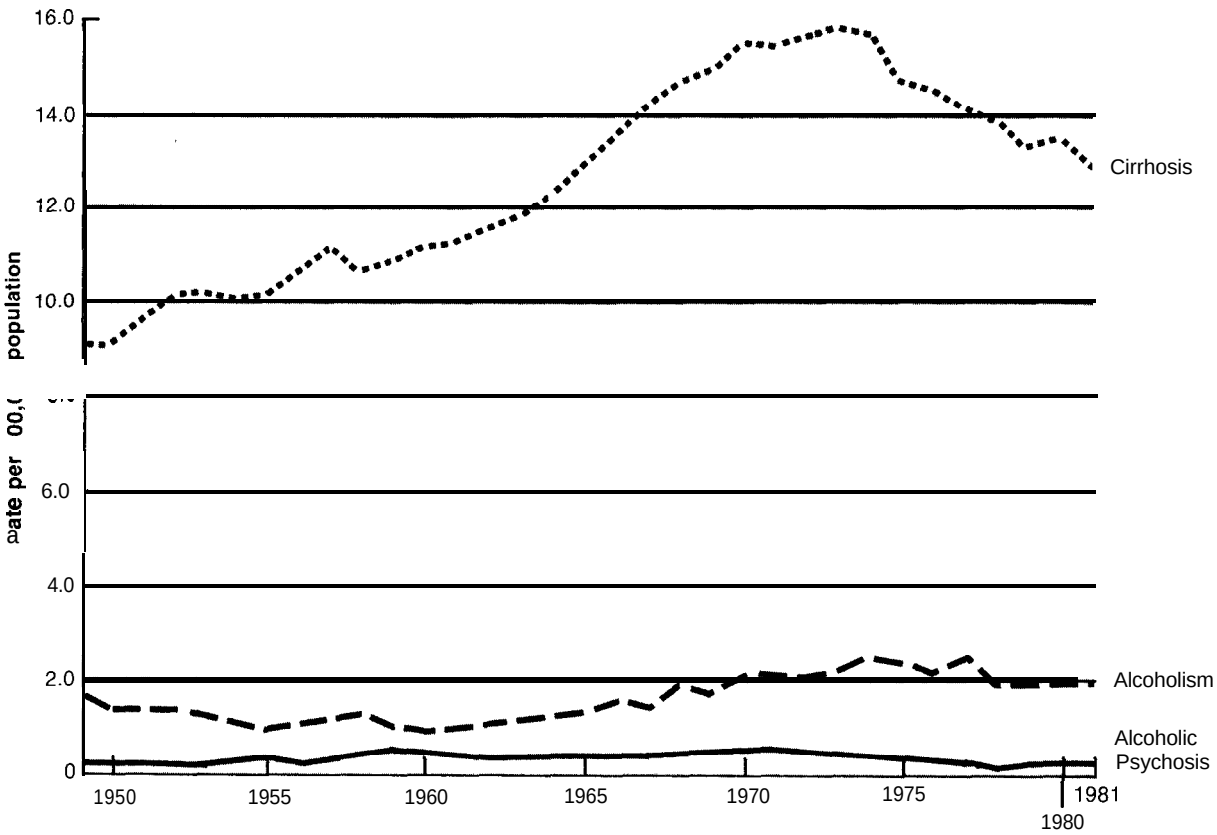
Figure 21. Age-Adjusted Cancer Death Rates for Females, by Site and Race: Selected Years, 1969-1981



Note: Age-adjusted to 1970 U.S. population

Source: National Cancer Institute.

Figure 22. Trends in Selected Alcohol-Associated Causes of Death: 1949-1981



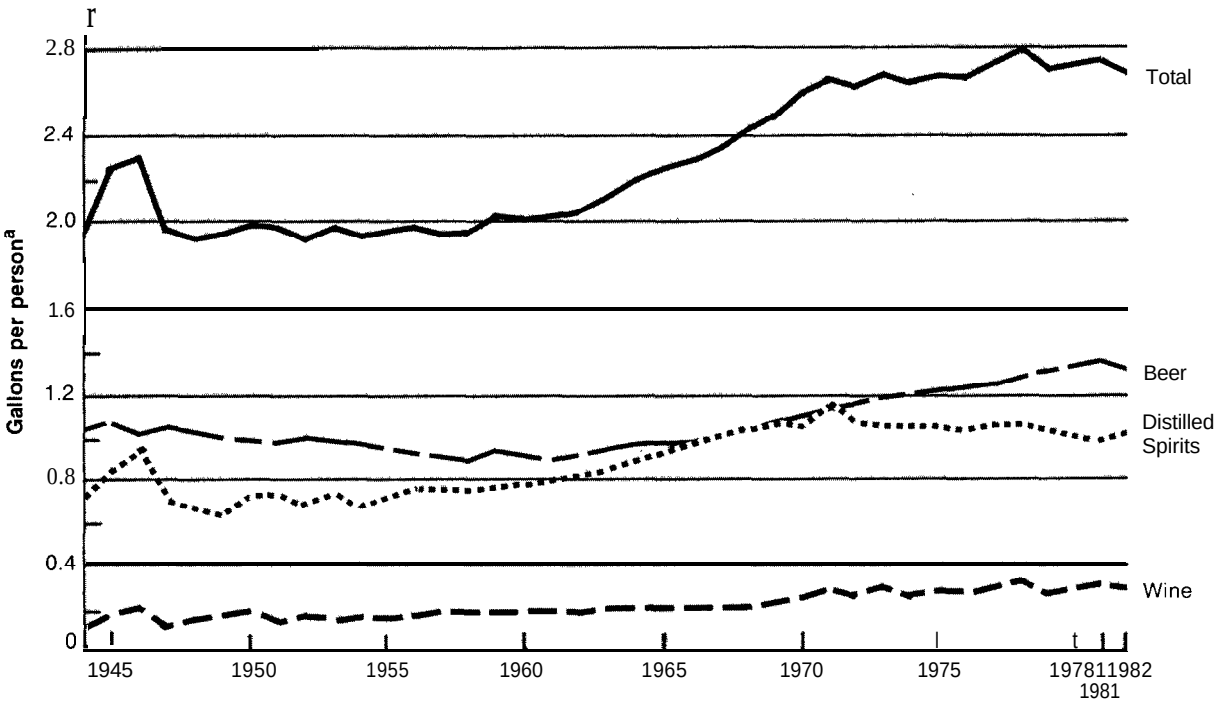
Source: National Institute on Alcohol Abuse and Alcoholism

Among both adults and younger people, alcohol abuse and alcoholism are associated with large numbers of preventable illnesses, injuries, and deaths. According to the National Institute on Alcohol Abuse and Alcoholism, 10 percent of adults who drink can be classified as problem drinkers. Another 26 percent are reported as having potential problems. The public health consequences of problem drinking include injuries and deaths from falls; crime; suicide; family abuse and other violence; industrial and motor vehicle accidents; and medical and psychosocial damage such as pancreatitis, nutritional deficiencies, cancer, fetal alcohol syndrome, and cirrhosis (the sixth leading cause of death among adults), of which more than 90 percent is associated with excessive use of alcohol. It is estimated that between one third and one half of all adult Americans involved in accidents, crimes, and suicides had been drinking alcohol.

Since 1950, there have been significant trends in three selected mortality rates associated with alcoholism and alcohol abuse (see Figure 22). The total cirrhosis death rate increased by 37 percent from 1960 to 1970, gradually leveled off, then decreased 19.5 percent between 1973 and 1981. Death rates due to alcoholism reached an apparent peak in 1977 and have leveled off since then.

Per capita rates of alcohol consumption rose approximately 21 percent during the 1960s, 10.3 percent during the 1970s, and 8.3 percent during the period 1970 to 1982. Overall, the increase betwen 1960 and 1982 in per capita rates of alcohol consumption was 3 1.9 percent. In 1982, per capital consumption was estimated as 2.73 gallons of ethanol per year for U.S. residents aged 14 years or older (see Figure 23). In terms of various beverages consumed, this amounts to 331 12-ounce cans of 4.5 percent beer, 12 fifths of 14.5 percent table wine, and 11.5 750-milliliter bottles of 43 percent (86 proof) distilled spirits per year, per person 14 years of age and older. It should be noted that abstainers are included in the derivation of this per capita consumption rate. An inflation factor of roughly 50 percent should be added to the estimated per capita consumption to derive the per capita consumption for only the drinking fraction of the population. It is important to note that only 30 percent of the drinking population accounts for 80 percent of the total amount of alcohol consumed, and that 10 percent of all drinkers account for 50 percent of the alcohol consumed in the United States. These proportions suggest that the most effective prevention strategies may relate to reducing the number of light drinkers who enter the heavy, problem-drinking group and to preventing the attendant consequences.

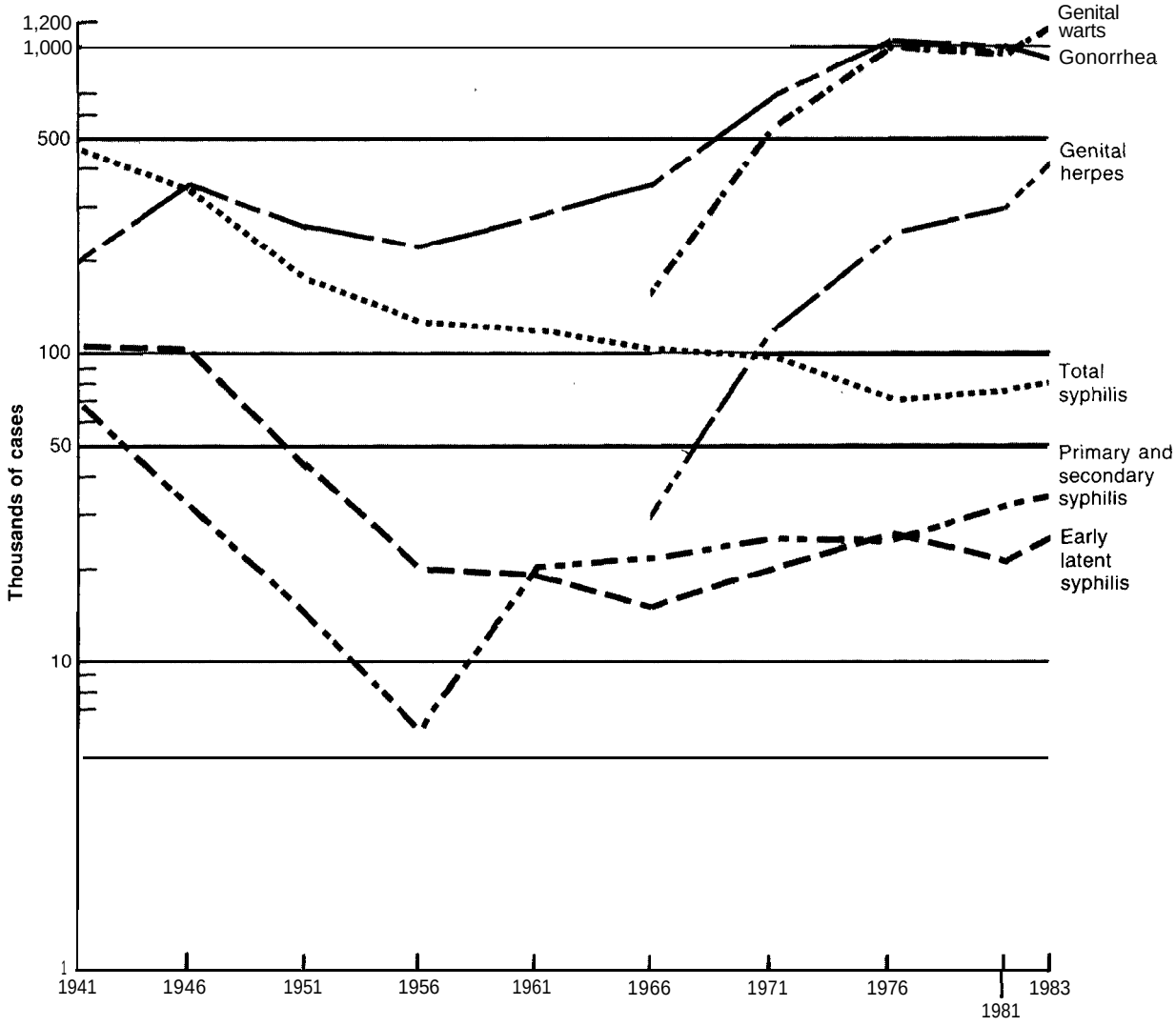
Figure 23. Trends in Apparent Per Capita Ethanol Consumption, Based on Beverage Sales: 1944-1982



[a]In U.S. gallons.

Source: National Institute on Alcohol Abuse and Alcoholism.

Figure 24. Cases of Venereal Disease Reported by State Health Departments: Selected Years, 1941-1983



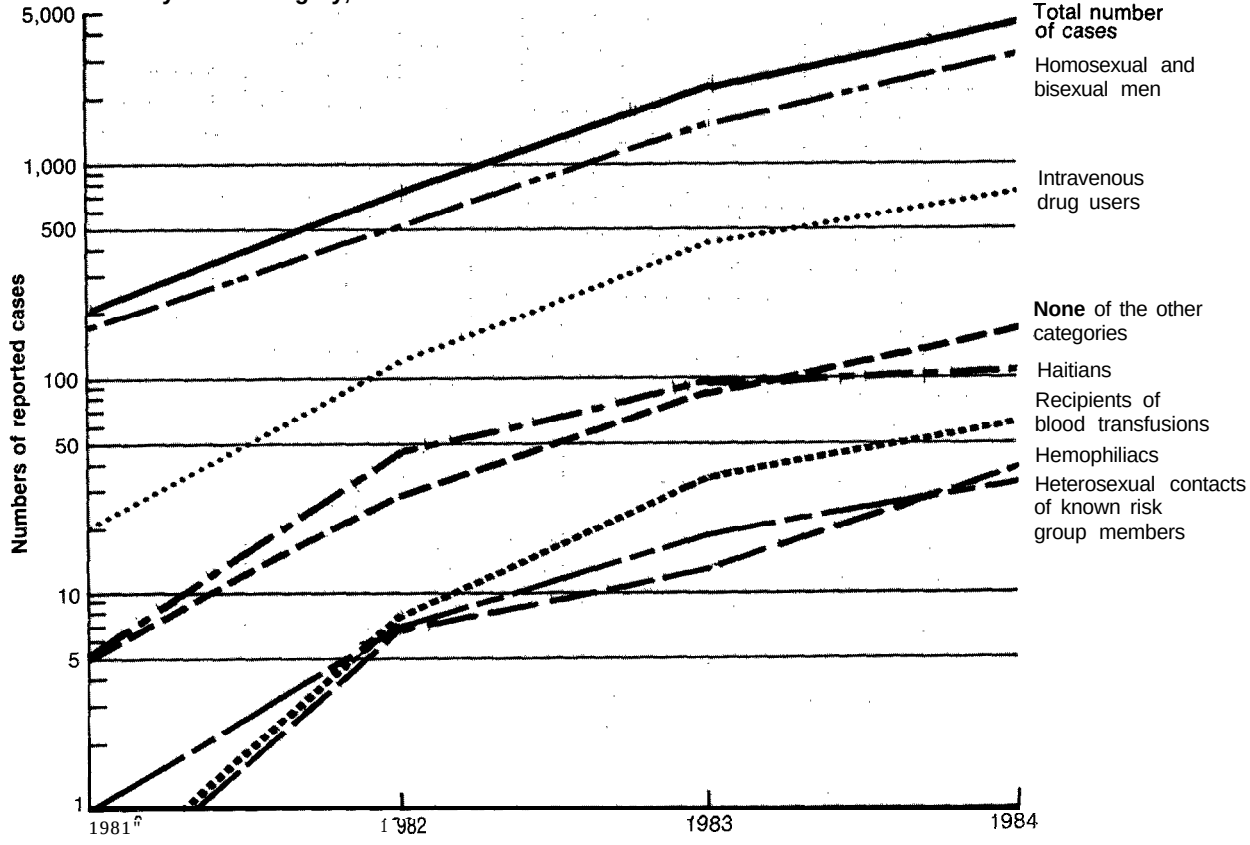
Source: Centers for Disease Control.

Until recently, five classical infections-gonorrhea, syphilis, chancroid, lymphogranuloma venereum, and granuloma inguinale-comprised the scope of venereal diseases on which Federal prevention programs focused. By the 1980s, however, it became evident that the spectrum of sexually transmitted diseases (STDs) also includes genital herpes, *Chlamydia trachomatis* infections, human papilloma virus, genital mycoplasmas, hepatitis, vaginitis, and other infections (see Figure 24). At least 23 organisms and 26 syndromes are now recognized as being sexually transmitted. Each year 2.5 million teenagers are affected with an STD.

The long-term consequences of STDs—primarily infertility, ectopic pregnancy, neoplasia, other types of reproductive loss, and infant pneumonia and infant death-as well as the alarming rates at which some STDs have increased, the financial cost, and the human suffering are all compelling reasons to make the control and prevention of STDs a priority of public health officials and of the scientific research community. Effective screening and diagnosis, rapid treatment, case investigation, and partner referral-along with education programs for the public and clinical training for medical students-are essential components of an STD prevention program.

Acquired Immunodeficiency Syndrome (AIDS) is a nationally recognized health problem being addressed by many medical disciplines and methodologies. AIDS is characterized by a severe and persistent breakdown in the immune system, and the populations at risk are homosexual and bisexual men with numerous sexual partners, persons with a history of intravenous drug abuse, persons with hemophilia, Haitians who have entered the United States recently, and sexual partners of persons with AIDS or at high risk for AIDS (see Figure 25). Examination of the number of cases of AIDS reported to State or local health authorities shows 23 times as many adult cases of AIDS in 1984 as in 1981. Trends in both the number and characteristics of hemophilia-associated AIDS cases are changing. During 1984, more cases were diagnosed than in all previous years of surveillance, but the number of cases did not increase consistently from quarter to quarter. Pediatric cases of AIDS also are on the increase, with no pediatric cases reported in 1981 and 37 cases reported in 1984. Development of a vaccine is one of the goals of research scientists studying AIDS (see OASH Prevention Highlights, AIDS Public Information Plan).

Figure 25. Numbers of Reported Cases[a] of Acquired Immunodeficiency Syndrome (AIDS) by Risk Category, [b] 1981-1984



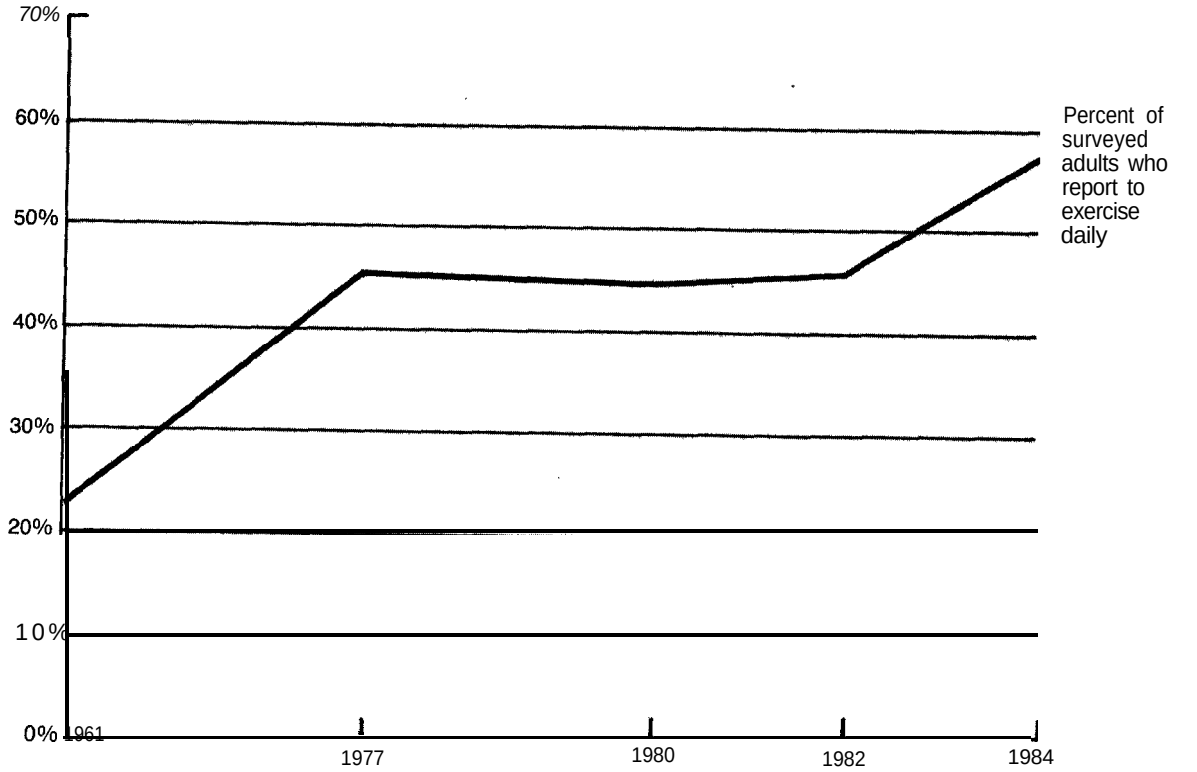
[a]The mean lag in reporting of a case is about two months, while only about 90 percent of the cases are reported even after six months. These data were compiled in March 1985.

[b]Classification is hierarchical. Patients with multiple risk factors are included only in the category listed first. The order of categories, beginning with the first, is as follows: Homosexual and bisexual men, intravenous drug users, Haitians, hemophiliacs, heterosexual contacts of known risk group members, recipients of blood transfusions, and none of the above categories.

[c]None reported in first quarter of 1981.

Source: Centers for Disease Control.

Figure 26. Secular Trends in Physical Activity: Selected Years, 1961-1964



Source: The Gallup Poll, Six of Ten Adults Exercise Daily, *Los Angeles Times* Syndicate, May 1984.

Research suggests that appropriate physical activity and regular exercise enhance approaches to the treatment and prevention of heart disease, obesity, hypertension, diabetes, musculoskeletal problems, stress, anxiety, and depression, but public awareness of the benefits accrued from physical fitness may still be limited. Is the American lifestyle still relatively sedentary, or are Americans exercising to keep physically fit? The results of the National Children and Youth Fitness Study, funded by the Office of Disease Prevention and Health Promotion, indicate that American children and adolescents are not developing the fitness skills that could help maintain good health as adults. Fewer than 40 percent of 5th through 12th graders take daily physical education classes. In comparison-although it is not possible to provide definitive trend data for adult leisure-time physical activity-data from a variety of sources suggest that over the last 15 to 20 years there has been an increase in the number of regular adult exercisers.

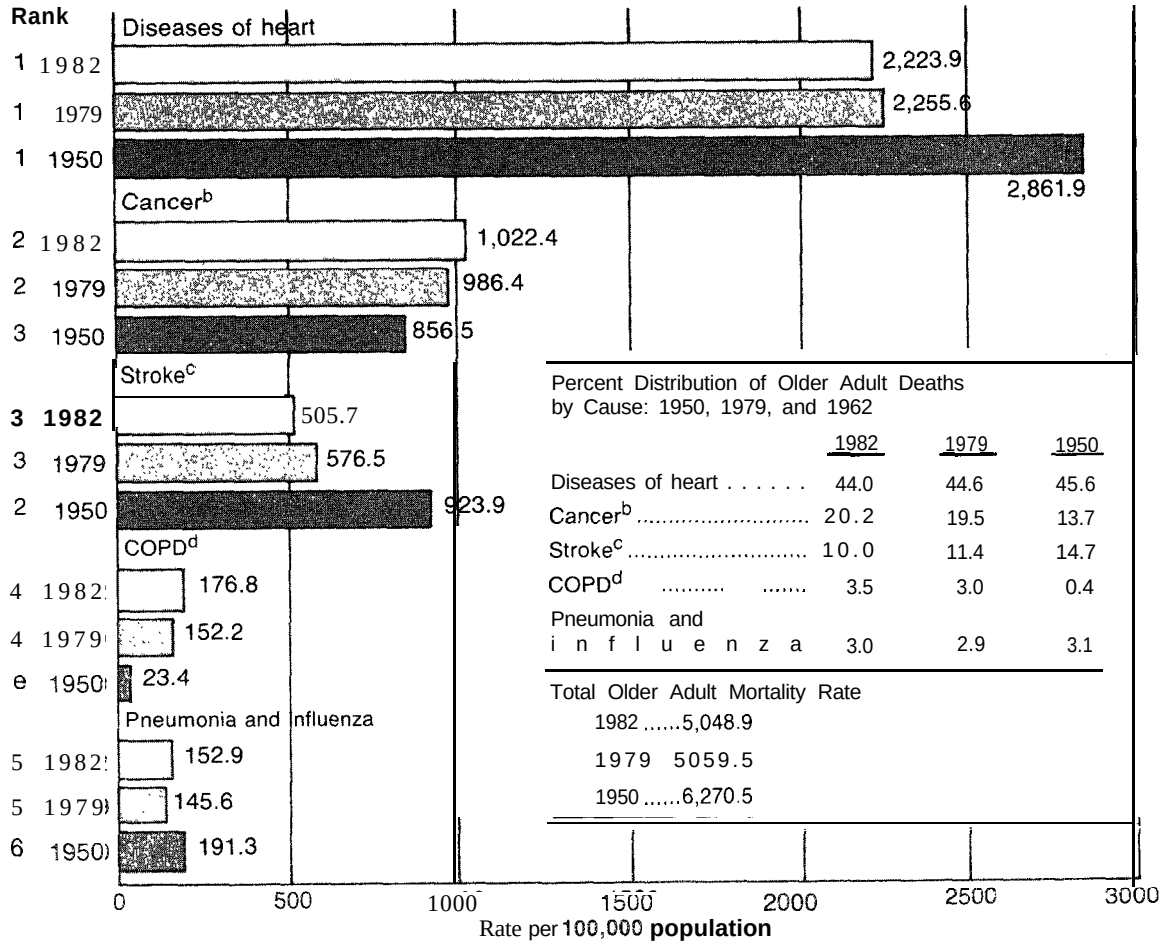
The Gallup Poll (Los Angeles *Times* Syndicate, May 1984) provides evidence of more than a twofold increase from 1961 to 1984 in the number of surveyed adults who reported exercising on a daily basis (see Figure 26). Equivalent increases over this period were reported for jogging, and this trend is consistent with increased sales of sporting equipment.

Although it seems safe to conclude that the proportion of the general population taking part in sports and conditioning activities has increased since the 1960s, the magnitude and the distribution of this increase are unknown. Surveys are now being implemented by the National Center for Health Statistics and the Centers for Disease Control to answer these questions.

Healthier Older Adults

Between 1980 and 1982, the rankings of the leading causes of death among those aged 65 and over have shifted substantially (see Figure 27). Although heart disease remains clearly the predominant cause of death, death rates have fallen 22 percent for this condition. Because of the large decrease in stroke death rates and the small but consistent increase in death rates for cancers, cancer death rates now lead those for stroke.

Figure 27. Leading Causes of Older Adult[a] Deaths: 1950, 1979, and 1982

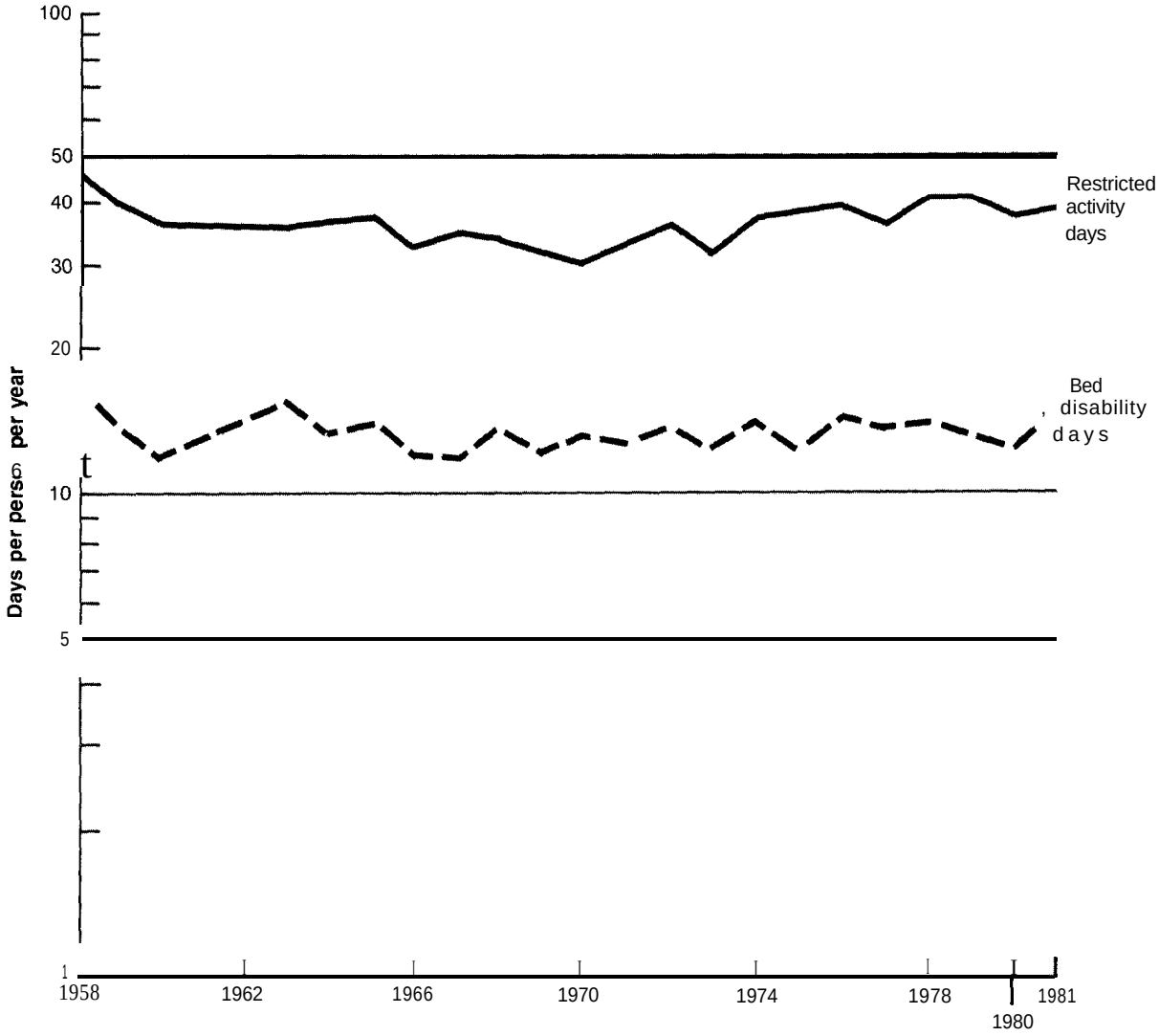


[a]Older adult = 65 years and older. [b]Cancer = malignant neoplasms, including neoplasms of the lymphatic and hematopoietic tissues. [c]Stroke = cerebrovascular diseases. [d]COPD = chronic obstructive pulmonary diseases and allied conditions. [e]Not ranked in first 10 leading causes of death.

Note: This figure shows rates for leading causes of death among older adults in 1979 and comparable rates and ranks for 1950 and 1982.

Source: National Center for Health Statistics.

Figure 28. Trends in Restricted Activity Days and Bed Disability Days Among Older Adults[a]: 1960-1981



[a]Older Adults = 65 years and older.

Source: National Center for Health Statistics.

Perhaps the dominant goal for older adults relates to improving the quality of life among the elderly. Two indicators of the extent to which health problems inhibit quality of life are the number of days that activity is restricted because of health problems and the number of bed disability days (see Figure 28). Restricted activity days, measured through the Health Interview Survey, represent days for which those surveyed reported they were unable to engage in their customary activity. The lack of progress in this area (36.5 restricted-activity days per person per year in 1977 and 39.9 days in 1981) may be in part a function of the measurement chosen for tracking, an issue that will be addressed in a future review of the prevention goals for this age group. Indeed, in recognizing the importance of good health, older Americans have been found to be interested in acquiring health information and in making lifestyle changes necessary to improve their health (see OASH Prevention Highlights, PHS/AoA Health Promotion Initiative for the Aging). Current prevention programs targeted to this group focus on injury control, physical fitness, nutrition, and appropriate use of medications.

Chapter 3

Agency Innovations

The Nation's prevention effort-our commitment to promoting and protecting health and preventing disease-is an endeavor that depends on the involvement and leadership of concerned individuals across the country as well as on the sustained participation of national, State, and community-level organizations. Within the framework of this cooperative effort, the Federal Government is an important contributor to the development, implementation, and evaluation of activities designed to help achieve the health objectives for the Nation. This chapter offers a look at the variety of activities that comprise the Federal contribution to prevention. Every agency of the Department of Health and Human Services (DHHS) contains programs with major prevention components-programs that range from basic and applied research to direct delivery of services, from sponsorship of health information and education to data collection and analysis, and from building the capacity of other organizations to conduct prevention activities to establishing and enforcing safety standards. This chapter reviews the prevention activities and accomplishments of the DHHS agencies and also features the contributions of other Federal agencies to the prevention effort. These highlights of Federal prevention activities provide one measure of the strength of a collective commitment to a healthier America.

Department of Health and Human Services

Public Health Service

Office of the Assistant Secretary for Health (OASH)

The Assistant Secretary for Health is responsible for national programs and policies related to health services delivery, disease prevention and health promotion, and biomedical research.

OASH Prevention Highlights

Implementation of the National Prevention Objectives. In *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention,* a number of broad national goals were established for the improvement of the health of the citizens of this country by 1990. The report noted the major health problems facing each of five major age groups and identified 15 priority areas in which, with appropriate action, further gains could be expected. In 1980, the Public Health Service issued a follow-up report, *Promoting Health/ Preventing Disease: Objectives for the Nation.* This report was developed through a cooperative effort of representatives from the public and private sectors. It established 226 measurable prevention objectives for the 15 priority areas. These prevention objectives were designed to be national guideposts rather than Federal obligations. They are intended to serve as a measure of the effectiveness of disease prevention and health promotion activities.

The Office of Disease Prevention and Health Promotion (ODPHP), in the Office of the Assistant Secretary for Health, oversaw the development of a series of implementation plans to identify the steps that the Public Health Service (PHS) intends to take in order to attain the national prevention goals. Various PHS agencies were assigned primary responsibility for developing an implementation plan for each of the 15 priority prevention areas. The plans were published in *Public Health Reports* as a supplement to the September/October 1983 issue. In addition to the implementation of health promotion and disease prevention strategies, monthly progress review sessions were initiated to systematically review national progress toward the 1990 objectives, and an automated data retrieval system has been established for tracking the objectives. It is important to note that achievement of these national health objectives depends on the collective efforts of Federal officials, State and local leaders, health and education professionals, and a range of community and business groups throughout the country.

AIDS Public Information Plan. Acquired Immunodeficiency Syndrome (AIDS) is a nationally recognized health problem characterized by a severe and persistent breakdown in the immune system. The case fatality rate among AIDS patients is now running at approximately 45 percent. Fewer than 20 percent of AIDS patients have survived more than 2 years after diagnosis. In no instance of AIDS has the immune system returned to normal. At present, the number of AIDS cases is doubling every 12 months. Epidemiological studies indicate that the syndrome is transmitted through sexual contact or direct exposure to blood or contaminated needles. The groups at highest risk for AIDS are homosexual or bisexual men, intravenous drug abusers, persons born in Haiti, persons with hemophilia, heterosexual partners of persons with AIDS, and recipients of blood transfusions.

The Public Health Service recognition of AIDS began in June 1981 with a report in the Center for Disease Control's *Morbidity and Mortality Weekly Report* of the first five AIDS cases in Los Angeles. Since then, the study of the problems of AIDS has drawn on many medical disciplines and methodologies. Through cooperative agreements with State health departments active surveillance of AIDS is maintained. In March 1983 the PHS published and widely distributed guidelines on the prevention of AIDS. In April 1984 it was announced that PHS scientists had identified the probable cause of AIDS as HTLV-III, the name give to the retrovirous believed to be the etiologic agent responsible for AIDS. This discovery may make control of AIDS feasible by permitting development of a screening diagnostic test for detecting the agent in blood of infected individuals and may make development of a vaccine possible. Lab tests by scientists of the National Institutes of Health and the Food and Drug Administration suggest that a

naturally occurring substance, interleukin-2, produced by the white blood cells of persons with normal immune systems, may help fight the severe immunological deficiencies of AIDS victims.

All PHS agencies have participated in some way in the national effort to provide information to the public regarding AIDS; to disseminate information regarding the retrovirous HTLV-III; and to provide information regarding development of a blood test for AIDS antibodies. These activities are coordinated by the Office of Public Affairs of the Office of the Assistant Secretary of Health, which has also conducted many of the more than two dozen individual projects comprising the AIDS Public Information Plan. In February 1985, the Centers for Disease Control will train more than 3,000 professionals on clinical and laboratory aspects of AIDS, serologic tests, medical referral and evaluation, and other appropriate information. In addition to the information disseminated for professionals, an extensive information campaign has been targeted to the public and to the populations at risk. The Public Health Service also operates a national AIDS toll-free hotline. The PHS has also mounted a collaborative project with the U.S. Conference of Mayors to identify the most effective educational strategies and materials in use in various cities and communities and to share those materials and techniques with health officials throughout the country in mounting their own AIDS information programs. A ***Fact Sheet on AIDS Research*** informs participants in the many PHS research projects about risks, informed consent, and the importance of the research on AIDS.

'Healthy Mothers, Healthy Babies" Public Information Program. The Public Health Service has initiated a cooperative effort to provide information promoting healthy behavior to pregnant women and women planning pregnancy. This program is seen as one means of achieving the Department of Health and Human Services' national objective of no more than nine infant deaths for each 1,000 live births by 1990. Called the "Healthy Mothers, Healthy Babies" campaign, it is being carried out by a coalition of government, professional, and voluntary organizations. Participants in the coalition, besides the U.S. Public Health Service, include approximately 60 agencies such as the March of Dimes Birth Defects Foundation, the American Academy of Pediatrics, the American Nurses Association, the American College of Obstetricians and Gynecologists, the Red Cross, and the U.S. Department of Agriculture. Materials including posters, information cards, radio and television public service announcements and programming, and newspaper columns, especially designed to appeal to low-income women, have been distributed nationwide on topics including smoking, nutrition, alcohol and drug use, breast feeding, and the importance of prenatal care. Kits for health care professionals on breastfeeding and substance abuse have been prepared in cooperation with member medical associations.

Of highest priority for national coalition attention is assisting States in the establishment of coalition chapters. The national coalition, which encourages States to address the needs of low-income women, is compiling a compendium of project activities at the community level to help programs get under way. Healthy Mothers, Healthy Babies national awards are given in recognition of outstanding community coalition activities each year on Child Health Day. A Healthy Mothers, Healthy Babies newsletter, distributed quarterly, reports on steering committee meetings and keeps members informed about the progress of coalition projects.

The Hispanic Health and Nutrition Examination Survey (HHANES). The HHANES is being conducted by the Department of Health and Human Services to produce estimates on the health and nutritional status of Mexican-Americans, Cuban-Americans, and Puerto Ricans. The HHANES is producing the first data on a large sample of the Hispanic population living in the United States on illness, disability, need for treatment or care, and nutritional status, as well as data on patterns of growth and development and on measures of health and well-being. The HHANES is a continuation of the National Health and Nutrition Examination Surveys conducted by the National Center for Health Statistics over the last 20 years, surveys that collected similar data for the White and Black populations of the United States.

The examination components of the HHANES for all participants include a medical history and a screening examination by a physician; a dental examination by a dentist; body measurements, including height, weight, and skinfolds, made by trained technicians; a dietary interview, covering food consumption and dietary habits; and numerous laboratory tests on blood. Depending on the age of the participant, the examination may include such other tests as a glucose tolerance test, tests for hearing and vision, and chest X-rays. In addition, household interviews are conducted for selected HHANES participants to obtain socioeconomic data, medical history, medication and vitamin usage, and health care needs and use of services. In all, 28 separate sites will have been visited, and about 16,000 Hispanics in the southwestern United States, Miami, and New York City will have participated in the survey. Beginning in 1985, basic data reports will present findings from the HHANES. It is expected that the wide range of statistics produced on the health of the Hispanic population will be valuable for estimating the prevalence of selected diseases and conditions, assessing health and nutritional status, determining needs for health care, analyzing relationships between health measures and risk factors, and evaluating aspects of health and nutrition programs.

National Toxicology Program (NTP). The National Toxicology Program (NTP) was established by the Secretary of the Department of Health and Human Services in FY 1979 to integrate DHHS activities and resources concerned with determining the toxicologic potential of chemicals and to establish an effective dialogue between the health research and regulatory agencies, enabling stronger links between toxicology research and regulatory needs. NTP consists of the relevant toxicology activities of the National Institutes of

Health's National Institute of Environmental Health Sciences (NIH/NIEHS), the Food and Drug Administration's National Center for Toxicological Research (FDA/NCTR), and the Centers for Disease Control's National Institute for Occupational Safety and Health (CDC/NIOSH). The National Institutes of Health's National Cancer Institute (NIH/NCI), a charter agency, remains active in the program through membership on the NTP Executive Committee. The Executive Committee is NTP's major advisory group on research and testing needs as well as on selection and priority-setting for the specific chemicals to be tested; it also serves as a forum for discussion of science policy issues and information exchange among agency heads. The Committee consists of the heads of the agencies already mentioned, plus the following: the Office of the Assistant Secretary for Health, the Occupational Safety and Health Administration, the Consumer Product Safety Commission, and the Environmental Protection Agency. The Board of Scientific Counselors, composed of eight non-governmental scientists appointed by the Assistant Secretary for Health, DHHS, reviews the NTP program for scientific adequacy and helps identify program needs.

The NTP attempts to focus relevant Public Health Service programs on (a) broadening the spectrum of toxicologic information which is obtained on chemicals selected; (b) increasing (within funding limits) the numbers of chemicals tested; (c) developing and validating a series of tests and protocols more appropriate for regulatory needs; and (d) communicating plans and results to government agencies, the medical and scientific communities, and the public. Its goal is to provide data to aid health regulatory agencies and the biomedical community in assessing and estimating human health hazards from chemicals and in taking steps to prevent these hazards. Development, validation, and application of better, more specific, rapid, and less expensive test methodologies have evolved since NTP's establishment as the core of its scientific activity.

The Surgeon General's 1983 and I984 Reports on Smoking and Health. The 1983 Annual Report on ***The Health Consequences of Smoking: Cardiovascular Disease*** reviewed in depth the relation between cigarette smoking and cardiovascular diseases and identified cigarette smoking as the most important of the known modifiable risk factors for coronary heart disease. Cigarette smoking has been estimated to be responsible for up to 30 percent of all coronary heart disease deaths in this country each year. The major cardiovascular diseases associated with cigarette smoking-coronary heart disease, cerebrovascular disease, arteriosclerosis, and peripheral vascular disease-collectively are responsible for more than three-quarters of all deaths from diseases of the circulatory system and almost one-half the deaths from all causes each year. The 1984 Surgeon General's Report on *The Health Consequences of Smoking: Chronic Obstructive Lung Disease* identified cigarette smoking as the major cause of chronic obstructive lung disease in the United States for both men and women. The report made the point that the significance of chronic lung disease in our society cannot be overstated. Two forms of chronic obstructive lung disease, chronic bronchitis and emphysema, afflict over 10 million persons in the United States, and collectively chronic lung disease accounts for over half a million hospital admissions annually. The contribution of cigarette smoking to chronic obstructive lung disease morbidity and mortality far outweighs all other contributing factors and is responsible for an estimated 80 to 90 percent of all chronic obstructive lung disease in the United States.

PHS/AoA Health Promotion Initiative for the Aging. Recognizing the importance of good health to opportunities for independence among the aging, the Public Health Service (PHS) and the Administration on Aging (AoA) launched in 1983 a joint national initiative designed to develop and expand health promotion programs for the aging. This collaborative effort, facilitated by the Surgeon General, represents the combining of resources in sponsorship of health promotion activities for the aging in the areas of injury control, appropriate drug use, nutrition, and physical fitness. A key objective of the initiative is to enhance the cooperation between State and local health departments, State and Area Agencies on Aging, and voluntary organizations in the development of programs at the local level for older persons. To date, the governors of 52 States and territories have designated lead State Agencies to direct health promotion plans and programs within each State. Technical assistance materials have been distributed to lead State agencies, and the development of health promotion coalitions has now begun in States and communities. Market research on health promotion for older persons has been carried out by the National Institute on Aging in collaboration with the Office of Disease Prevention and Health Promotion, the National Cancer Institute, and the Administration on Aging. This research examined the level of health information among the elderly and their willingness to adopt healthier ways of living. Exercise and nutrition were selected as the most promising areas for education. The conclusion of the research was that the elderly are a prime and appropriate audience for a health promotion campaign: The elderly are interested in health, in the costs associated with health, and in maintaining the best possible quality of life.

U.S. Preventive Services Task Force. This PHS task force has been convened to develop recommendations for the appropriate use of preventive services in clinical settings. Smoking, immunization, inappropriate use of alcohol, breast cancer, dietary fat, automobile injury, and functional dependence among the elderly are among the topics of the 1984-1985 task force agenda. The U.S. Preventive Services Task Force will work collaboratively with the Canadian Task Force on the Periodic Health Examination to consider issues of mutual interest related to the use of preventive services in clinical settings. A Liaison Council with representation from both task forces will meet regularly to enhance the collaborative effort and to prevent duplication of tasks. The U.S. Preventive Services Task Force will produce subsets of recommendations, to be published in medical journals, before submitting a final report of age-specific recommendations in late 1985. The first subset of

recommendations is a review of immunization services. The final recommendations document will be submitted for use by health care practitioners in clinical settings and will include an implementation guide.

Office of Disease Prevention and Health Promotion

The Office of Disease Prevention and Health Promotion (ODPHP) was established to coordinate policy and program development in prevention. The key policy documents for Federal strategies in prevention are *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* and *Promoting Health/Preventing Disease: Objectives for the Nation.* The Office of Disease Prevention and Health Promotion was instrumental in the development of these documents and is charged with the responsibility of overseeing Public Health Service agency efforts toward implementing the strategies and of coordinating the overall DHHS agency efforts in disease prevention and health promotion. The ODPHP gives special emphasis to supporting and encouraging the activities of a broad range of groups outside the Federal Government whose participation is essential to successful national efforts to enhance the health of Americans. The major initiatives around which ODPHP is currently organized are described here.

ODPHP Prevention Highlights

2990 *Objectives Initiative.* The ODPHP oversees implementation of prevention efforts involving nearly all Public Health Service agencies as well as State and local governments and private and voluntary organizations (see OASH Prevention Highlights, Implementation of the National Prevention Objectives).

Nutrition *Initiative.* The nutrition initiative works to strengthen the Department's capabilities and national leadership in nutrition research, nutrition monitoring, nutrition services and training, nutrition education, food safety and quality, and international nutrition programs. The effort is overseen by the DHHS Nutrition Policy Board, chaired by ODPHP Director. The nutrition activities in ODPHP center around planning and supervising the nutrition initiatives of the 1990 national health objectives, participating in a number of DHHS and government-wide committees on nutrition, tracking nutrition-related projects within DHHS, and coordinating among ODPHP initiative directors and staff nutrition activities related to the 1990 national health objectives. Examples of ODPHP nutrition projects are the oversight responsibility for the *Surgeon General's Report on Nutrition and Health,* revising and publishing the *Report of DHHS Nutrition Activities,* participating in the revision of the *Dietary Guidelines for Americans,* sponsoring an annual nutrition symposium, and responding to Congressional requests for testimony and reports documenting DHHS nutrition activities.

Preventive Services Initiative. ODPHP's Preventive Services Initiative promotes the delivery of preventive services to individuals and the community through its work with major academic institutions, professional organizations, scientific groups, and reimbursement agencies. Efforts to improve health care delivery supported by the Preventive Services Initiative include the research and development of disease prevention training programs for students, health professionals, and the general public; the evaluation of currently used preventive services in the clinical community (i.e., in physicians' offices, clinics, and hospitals) for cost, efficacy, and effectiveness; and the identification of gaps in current knowledge in prevention to encourage further research in these areas. In addition, the impact of these components-education, implementation, evaluation, and research-on the health care system is also assessed from an economic standpoint. Specific projects include the U.S. Task Force on Preventive Services (see OASH Prevention Highlights), the Association of Teachers of Preventive Medicine-Society for Research and Education in Primary Care Internal Medicine (ATPM-SREPCIM) preventive medicine curriculum project, the Conference on Prevention Research, and the Health Fair Screening evaluation study. The ATPM-SREPCIM project invited experts from the fields of internal medicine and preventive medicine to discuss potential areas of cooperation between the two fields and to make recommendations to their respective professional organizations for the inclusion of preventive medicine training in graduate medical education. The Conference on Prevention Research, cosponsored by the National Institutes of Health-in cooperation with several PHS agencies, the American Public Health Association, the Association of Teachers of Preventive Medicine, and the Association of Schools of Public Health-is being planned for the fall of 1985. The conference will attempt to put in perspective the wave of new knowledge created by rapid progress in biomedical research so that interventions for which there is a sufficient scientific base may be promoted. Conference participants also will identify areas of research in which innovative studies, and possible funding, should be sought. The Health Fair Screening study begins an ODPHP-sponsored examination of health fair services as currently available to assess their effectiveness, benefits, and costs to the general, relatively healthy population.

School Health Initiative. Because early childhood health patterns and practices set the stage for good health in later years, a special initiative has been established to enhance the health of school children. To this end OPDHP has cosponsored with the Department of Education an Interagency Committee on Health Promotion Through the Schools and maintains interagency communication through regular meetings of an Ad Hoc Committee on Health Promotion Through the Schools. ODPHP has also undertaken the National Children and Youth Fitness Study, the first comprehensive health-oriented effort to assess the fitness level of school children; fostered the development of a special review on

the use of computers for health education; sponsored with the Centers for Disease Control a major evaluation of curricula developed for school health education; developed a manual for evaluating school-based health promotion; and cosponsored with the National Heart, Lung, and Blood Institute The National Conference on School Health Education Research in the Heart, Lung, and Blood Areas. Visibility for health education in the school community is also enhanced through a cooperative agreement with the American Association of School Administrators.

Worksite Health Promotion Initiative. Given the rising costs of health care as a business expense, employers have both a special opportunity and a special incentive to enhance the health of employees and their families. The activities of the National Worksite Health Promotion Initiative begain in 1979 with sponsorship of the first National Conference on Health Promotion in Occupational Settings. Current activities include provision of materials to assist in the development of worksite health programs; case studies of the health promotion activities of business coalitions and the needs of small businesses; collaborative efforts to improve the quality of evaluation of worksite health promotion; a national survey of worksite health promotion activities; a project to explore the future of work and health; a project to increase union sponsorship of worksite health promotion activities; and a project to increase the accurate reporting in the media of innovative mechanisms to enhance health through work.

Community/Media Health Promotion Initiative. National and local media are being used to help mobilize community resources for health promotion. In 1981 the Healthstyle campaign distributed television, radio, and print public service announcements nationwide for the purpose of reaching the general public with health promotion information. Another media-based effort is the "Healthy Mothers, Healthy Babies" Public Information Program (see OASH Prevention Highlights), an ongoing effort to inform women of good health practices during pregnancy. In 1984, ODPHP's community/media health promotion initiative has focused on providing health promotion information to older Americans and stimulating the development of health promotion programs for this age group. A May 1984 report entitled "Aging and Health Promotion: Market Research for Public Education" summarized work done to determine the level of interest of older people in acquiring health information and their ability and desire to make lifestyle changes, if necessary, to improve their health. Based on findings from that work, a major public education program is currently being implemented as part of the Public Health Service/Administration on Aging Health Promotion Initiative for the Aging (See OASH Prevention Highlights). The public education aspect of the initiative will continue into 1986 and will (a) produce a variety of broadcast and print materials; (b) disseminate those materials nationally, principally through State contacts; and (c) help stimulate the development of health promotion programs. A number of voluntary and health organizations will be participating in the project both at the national and State and local levels.

Risk Assessment Review. Recent years have brought an expansion in the use of formal quantitative and qualitative risk assessment techniques to aid in decision-making for national policies related to reduction of health risks. Because of different mandates among the various PHS agencies, the development of risk assessments for policy purposes varies substantially from agency to agency. The Risk Assessment Initiative was charged with the study and evaluation of the different ways that PHS agencies conduct risk assessment and forward them for decision at the policy level. Work was undertaken through the DHHS Task Force on Health Risk Assessment, chaired by the ODPHP Director, resulting in the 1985 publication entitled ***Determining Risk.***

National Health Information Clearinghouse (NHIC). The Clearinghouse, created in 1979 by the Office of Disease Prevention and Health Promotion, identifies health information resources, channels requests for information to these resources, and develops publications that provide information on health-related topics of widespread interest. The Clearinghouse receives inquiries by mail, by telephone (a toll-free number is provided), and in person. When an inquiry is received, the NHIC staff searches its database to find the organizations that can best respond. The NHIC database, which is available online via the DIRLINE (Director of Information Resources Online) database, contains descriptions of health-related organizations that will provide the public or health professionals with health information. The NHIC has developed a thesaurus called ***Health Information Terms,*** which is used to index the subjects and services provided by these organizations. The Clearinghouse also produces resource lists in response to current health concerns. One series of these, called ***Healthfinders,*** has described resources on topics such as herpes, health fairs, and medications. Other NHIC publications have included bibliographies and directories devoted to Federal health information resources. The Clearinghouse also produces the ***DHHS Prevention Activities Calendar*** and ***DHHS Prevention Abstracts*** for the ODPHP. In addition, the "NHIC News" appears as a regular feature in ***Focal Points,*** the newsletter of the Center for Health Promotion and Education of the Centers for Disease Control.

National Health Promotion Program. In an effort to strengthen private sector involvement in the national health promotion and disease prevention effort, ODPHP has initiated cooperative agreements with national organizations through the National Health Promotion Program. The purpose of the program is to educate the public about environmental, occupational, societal, and behavioral factors which affect health so that individuals may make informed decisions about health-related behavior. Under this program, participating organizations work to advance the concepts of health promotion and disease prevention by stimulating the adoption of such programs and policies among their

members and/or constituencies. At present, ODPHP has cooperative agreements with the Washington Business Group on Health, the Workplace Health Fund, and the American Association of School Administrators. In FY 1985 ODPHP expects to initiate eight additional cooperative agreements with national organizations.

The President's Council on Physical Fitness and Sports (PCPFS)

The President's Council on Physical Fitness and Sports (PCPFS) was established in 1956 as the President's Council on Youth Fitness to combat a serious decline in the physical fitness performance abilities of our Nation's youth. In 1963 the responsibilities of the PCPFS were expanded to include the adult population and sports. The Council works with State and local governments, schools and colleges, professional associations, sports organizations, businesses and industries, and the private sector to promote participation in exercise and sports. To this end the PCPFS also conducts two public information campaigns each year, emphasizing the preventive health aspects of physical fitness and exercise.

PCPFS Prevention Highlights

Youth ***Fitness Emphasis.*** A special PCPFS initiative on youth physical fitness opened with a series of six public hearings held throughout the United States in March and April of 1984. These hearings brought to the Nation's attention a concern for the status of youth fitness as evidenced by current research studies and physical education program reductions in schools and elsewhere. A June 1984 National Conference on Youth Fitness focused ***on*** the importance of physical fitness and exercise in disease and injury prevention. Participants heard reports on exemplary youth fitness programs conducted by schools, recreation departments, and youth agencies. As part of an emphasis on fitness as a preventive health and dynamic life measure, a school physical education report card on physical fitness, called the FITNESSGRAM, has been introduced to schools, students, and parents. The 1984-1985 national pilot of this program reaches schools in all 50 States.

Physical Fitness Demonstration Centers. The Demonstration Center program is conducted in cooperation with State Departments of Education. Each State identifies elementary and secondary schools that represent the highest quality of physical education programs with an appropriate emphasis on the contribution of physical fitness to health and dynamic quality of life. These schools are certified by the PCPFS as Demonstration Centers and serve as referrals for people interested in visiting model programs.

Presidential Physical Fitness A ward. This program recognizes 10-17-year-old youths who score at a designated level on a series of physical fitness tests. Over seven million boys and girls have qualified for the award since it was started in 1966.

1983 ***White House Symposium on Physical Fitness and Sports Medicine.*** The third White House Symposium on Physical Fitness and Sports Medicine featured reports on the current state of knowledge concerning muscle physiology and anatomy; the research basis for muscular strength and endurance in physical fitness, sports performance, work, health, and rehabilitation; and program applications of scientific principles.

Regional Physical Fitness and Sports Clinics. The PCPFS held eight Regional Leadership Training Clinics on Physical Fitness and Sports in 1983 and 1984. The two-day clinics include hands-on leadership instruction in testing and evaluation, physical education in the schools, specific athletic activities such as water exercises, jogging, and exercise for older adults and the physically impaired. Since 1962, when the clinics were initiated, over 100 regional clinics have reached more than 225,000 people.

Business and Industry Conferences. Three regional conferences on physical fitness at the workplace were cosponsored by the PCPFS and private industry in 1983 and 1984. The conferences highlight trends in the development of employee health and fitness programs at the worksite.

First National Women's Leadership Conference on Fitness. The first National Women's Leadership Conference on Fitness was held on April 6 and 7, 1984. The conference encouraged women to promote health and fitness in the home, community, and workplace and provided attendees with practical, accurate health and fitness information and skills. On the evening preceding the event, five individuals received awards for their national leadership contribution to women's sports and fitness. State follow-up meetings are now being organized to continue the impact of the conference.

Federal Health and Fitness Programs. In 1984 the PCPFS launched a new initiative called FIT (Fitness Implementation Teams) to assist, through consultation with small groups of specialists, Federal agency administrators in creating worksite fitness programs. In addition to the consultation, the "FIT Kit" describes how efforts to provide worksite fitness programs can be related to productivity, morale, and disability.

Office on Smoking and Health (OSH)

Cigarette smoking is clearly the single most important preventable cause of premature death and disability in the United States. The serious health consequences and related economic burden of cigarette smoking can be reduced by programs of information, intervention, and cessation. The long-range goal of the Office on Smoking and Health (OSH) is to reduce premature death, disability, and health care costs associated with cigarette smoking. To accomplish this goal, the OSH sponsors information and education programs designed to reduce the prevalence of cigarette smoking. The

focus of these programs is to reduce the number of cigarette smokers in the adult and teenage population; delay and eliminate the experimentation and adoption of cigarette smoking among childen and adolescents; and reduce the prevalence of smoking among specific subgroups of the population who may be at special health risk, including women who are pregnant or take oral contraceptives, asbestos workers, coal and uranium miners, and racial and ethnic minorities. The OSH also collaborates with the National Center for Health Statistics in the development of national surveys of smoking prevalence, knowledge, attitudes, and beliefs. With the Centers for Disease Control, the OSH helps States establish smoking goals and collect risk factor data.

OSH Prevention Highlights

The 1984 Surgeon General's Report on the Health Consequences of Smoking: Chronic Obstructive Lung Disease. See OASH Prevention Highlights for a discussion of this most recent Surgeon General report on smoking.

Technical Information Center. The Technical Information Center (TIC) of the Office on Smoking and Health serves as a world-wide resource for information on smoking and health. The service of providing bibliographic information was first undertaken in 1965 by the predecessor agency of the Office, the National Clearinghouse for Smoking and Health. The document collection of the TIC represents the world's most comprehensive repository of published data on smoking and health, with almost 50,000 scientific titles. TIC's second service area is its recently established Smoking Studies Section, which deals almost exclusively with numeric data sets containing significant tobacco use information. These data are taken primarily from non-published sources, including national probability surveys undertaken by various Government agencies. In addition, the Smoking Studies Section designs and conducts national surveys on smoking and tobacco use characteristics among various segments of the U.S. population. A current survey to assess the smoking behavior, attitudes, knowledge, and beliefs among 12,000 adults is expected to be completed in 1985. A similar survey among teenagers is planned for mid-1986.

The Technical Information Center possesses the computer and microfilm technologies to provide special searches of the bibliographic data system and to provide references, abstracts, and hard copies to researchers on request. National and international smoking and health research communities, policy makers, and other experts are kept abreast of current research through a continuing series of publications. In addition to compiling and publishing the annual Surgeon General's report, TIC publishes a bimonthly ***Smoking and Health Bulletin,*** which contains abstracts of recently published studies categorized by 17 subject areas; the ***Bibliography on Smoking and Health,*** an annual compilation of abstracts similar to the *Bulletin*; a biennial ***Directory of On-Going Research in Smoking and Health,*** which presents descriptions of current research projects in smoking and health from around the world; and ***State Legislation on Smoking and Health,*** an annual publication which summarizes all bills and other legislative proposals on smoking introduced in the 50 State legislatures.

National Media Campaign. The Office on Smoking and Health runs an annual media campaign to encourage young people not to take up smoking, or if they have already begun smoking, to quit; to encourage adults to quit and to continue to refrain from smoking; and to encourage less hazardous smoking, to the extent that less hazardous smoking is possible. OSH uses public service announcements on TV and radio; programs for radio; advertisements in journals, magazines, and school and college newspapers; public transit and point-of-sale displays; and pamphlets to relay its message to the public.

Office of Population Affairs (OPA)

The Office of Population Affairs (OPA) develops policy and coordinates activities in the areas of population research, voluntary family planning, adolescent pregnancy, adolescent family life, population education, and related health concerns. OPA is responsible for administering the Title X, Family Planning, and Title XX, Adolescent Family Life, programs under the Public Health Service Act. It also serves as the focus for grant and contract activity in these areas and acts as a clearinghouse for information on these and related topics.

Office of Adolescent Pregnancy Programs

Adolescent pregnancy and early sexual activity continue to be serious problems in the United States. Although in the last 10 years the number of babies born to teenagers has declined, the rate of births for this age group has been relatively constant for the last four or five years. In 1981, 527,392 babies were born to adolescents 15 to 19 years of age, and 9,632 were born to teens under 15 years of age. A large percentage of these teenage mothers began prenatal care later than older mothers: In 1981, teenage mothers were twice as likely as 20-24-year-old mothers to get no or late (not until the last trimester) prenatal care. Teenage mothers were also more likely than older mothers to have a baby with low birth weight: In 1981, 11 percent of babies born to 15-17-year-old mothers were of low birth weight compared to 6 percent of babies born to 25-29-year-old mothers.

Adolescent Family Life Program. This program funds mode1 care and prevention projects that are designed to demonstrate effective ways to deal with the problem of adolescent pregnancy. Model care projects deliver prenatal and postnatal care, continuing education, and adoption counseling. Model prevention projects encourage adolescents to postpone sexual activity and emphasize family involvement. The Adolescent Family

Life program also funds research projects that will contribute to our knowledge of how to prevent teenage pregnancies and their adverse consequences. The program is currently funding 71 model demonstration projects that offer care and prevention services and 24 research projects in the areas of premarital adolescent sexual relations, adoption, and services for pregnant adolescents and teenage parents.

Office of Family Planning

The family planning program under Title X contains four components: family planning services, training, development of information and educational materials, and service delivery improvement research. The delivery of family planning services involves the awarding of grants by the Public Health Service Regional Offices to public and private nonprofit entities to establish and operate voluntary family planning projects. When Title X legislation was enacted, Congress identified the need for a national program to assist in making "family planning services readily available to all persons desiring such services." Congress later added the requirement that natural family planning, infertility services, services for adolescents, and family involvement must be provided by Title X projects. The family planning program currently has 88 grantees that provide services to 3.7 million individuals through 4,500 clinic sites.

National Center for Health Statistics (NCHS)

The National Center for Health Statistics (NCHS) is the principal Federal source of data used in planning health services and other programs that meet the health needs of the Nation. The Center collects and analyzes data that address the full spectrum of concerns in the health field, including overall health status, lifestyle, and exposure to unhealthful influences; the onset and diagnosis of illness and disability; and the use of health care and rehabilitation services.

NCHS Prevention Highlights

The 1983 National Health Interview Survey (NHIS) Alcohol/Health Practices Supplement. In this supplement to the NHIS, data were collected on alcohol use and other health practices among persons 18 years and older. The survey data will provide information to determine the quantity and frequency of alcohol consumption so that the population at risk of alcohol-related problems may be identified. The data also will provide information to correlate drinking behavior with such sociodemographic characteristics as age, education, sex, occupation, and marital status and with such health status indicators as disability days, doctor visits, and injuries, as well as with indicators of personal health habits and practices.

The 1985 National Health Interview Survey (NHIS) Health Practices/Disease Prevention Supplement. The 1985 NHIS Health Practices/Disease Prevention Supplement is designed to collect national baseline data on 1990 health promotion and disease prevention objectives. Data will be collected on the extent of awareness of certain health risk factors, awareness of appropriate disease prevention measures, use of safety devices, extent of prevention advice received from health care providers, and the prevalence of certain health risk behaviors. The data from the 1985 Health Practices/Disease Prevention NHIS Supplement will assist the public and private sectors in setting priorities and allocating funds among their health promotion programs and will enable the Public Health Service agencies to monitor progress toward the 1990 objectives for which they are responsible.

National Natality Survey and National Fetal Mortality Survey (2980). This followback survey collected information from mothers, physicians, hospitals, and other medical sources associated with a sample of 9,941 live births and 6,386 fetal deaths occurring in 1980. The data base includes information on prenatal health practices of the mother, such as smoking and drinking; a complete pregnancy history; and occupational data on both parents. Seven Public Health Service agencies collaborated with the National Center for Health Statistics in designing, funding, and analyzing the survey. Analysts are using the data to assess risk factors and indicators related to poor pregnancy outcome. Several dozen reports and a public use data tape are available containing data from the survey on such topics as electronic fetal monitoring in relation to Caesarean section delivery, trends in maternal and infant health factors associated with low infant birth weight, radiation procedures performed during pregnancy, infant health consequences of childbearing by teenagers and older mothers, social and clinical correlates of postpartum sterilization and maternal smoking and drinking behavior before and during pregnancy.

NHANES-Epidemiologic Follow-up Survey. This follow-up study of the 14.407 subjects examined as part of the National Health and Nutrition Examination Survey-1 (1971-1975) will provide a unique opportunity to investigate how risk factors measured in the earlier study related to subsequent morbidity and mortality. The survey is funded by the National Institutes of Health and other PHS agencies. The initial follow-up phase (1982-1984) has been completed, and plans are in process for continued follow-up. NCHS and other agencies plan to issue over 100 analytical reports presenting data from the survey, and public use data tapes are expected to be available in late 1986.

National Survey of Family Growth (NSFG). The NSFG is a multipurpose statistical survey that provides important baseline and evaluation data for a variety of health programs concerned with the dynamics of population change, family planning, and maternal and child health. The NSFG produces data on such topics as trends in the frequency of pregnancies and their outcomes; the comparative use-effectiveness of various contraceptive methods; and the frequencies and socioeconomic characteristics of adolescent pregnancies and their outcomes. The survey is based on personal inter-

views with a nationally representative sample of women in the childbearing ages, regardless of marital status, in the noninstitutional population of the United States. Data preparation, statistical analysis, the release of public use data tapes for scientific research, and the publication of both the basic findings and selected analytical reports will proceed through FY 1984 and FY 1985.

National Center for Health Services Research and Health Care Technology Assessment (NCHSR/HCTA)*

The National Center for Services Research and Health Care Technology Assessment (NCHSR/HCTA) is the primary source of Federal support for research on problems related to the quality and delivery of health services. It responds to the need for better data and information, new techniques, and innovative methods for improving the process of delivering health care. NCHSR/HCTA programs evaluate the quality and the utility of health services research, assess recent technologies, and improve the access to new research findings for research users as well as for health care policy makers. NCHSR/HCTA's priority areas for investigation include health promotion and disease prevention, technology assessment, the role of market forces in delivering health care services, and health information systems. In any of these areas special priority is given to proposals that address State and local **issues** in health services delivery.

NCHSR/HCTA Prevention Highlights

NCHSR/HCTA Grants. The Center's major activities in health promotion and disease prevention are in its extramural research program. In 1984, NCHSR/HCTA grants are supporting 10 prevention studies. These studies approach health promotion and disease prevention from two distinct perspectives. The first perspective examines public policy as it relates to prevention programs, and the second focuses at the service delivery level to examine the effectiveness of various provider interventions.

Public Policy Research. **One** current public policy project examines some of the legal, economic, social, and ethical aspects of government intervention in health promotion and disease prevention. A second examines the data on the costs and benefits of prevention programs and on the cost-effectiveness of various interventions. A third is investigating new control efforts for childhood lead poisoning. The results of this study will have implications for States and communities with Lead-Based Paint Poisoning Prevention Programs.

Provider-Level Research. One recently completed study funded by the Center evaluated the effectiveness of primary care physicians in a health maintenance organization (HMO) in providing preventive health services. The investigation used two randomized clinical trials to test several strategies physicians may use to (a) increase patient compliance with colorectal screening and (b) increase patient efforts to quit smoking. In the colorectal screening trial, the experimental interventions were a physician talk, a postcard reminder, and a follow-up phone call. Compliance rates were significantly improved by all experimental interventions; the group receiving all three interventions achieved a 94 percent compliance rate. The postcard reminder was the most effective single intervention, increasing the probability of compliance by 25 percent. Because of the low cost of this intervention, this finding would suggest that postcard reminders should become a standard adjunct to routine screening requiring patient compliance. The smoking cessation trial was designed in a similar fashion to the colorectal cancer screening trial. The interventions tested were a physician talk, reading materials from the National Cancer Institute, and a referral to a smoking cessation program conducted by health educators. Although this trial found no significant difference in smoking quit rates between the control group and the experimental groups, the interventions did exhibit a positive effect on trying to quit. If, as other studies have indicated, trying to quit smoking is often a precursor to eventual cessation, physicians may be able to contribute to the cessation process. The study also confirms that cigarette smoking, like obesity, alcohol and drug abuse, and other lifestyle-health problems, may not be amenable to the relatively simple intervention strategies that primary care providers can easily incorporate in their practices.

The Center also funded an exploratory study which sought to determine whether differences exist in preventive practices behavior between physicians who join independent practice associations and those who do not. With respect to both practice behavior and attitudes concerning health promotion and disease prevention, there appear to be no major differences between the two physician groups. The study also showed that preventive services were delivered more frequently than they were recorded in the medical record. The physicians in the study also indicated that although they felt that it was important for them to influence patients to practice preventive behaviors, they perceived lack of patient motivation, inadequate time, and lack of reimbursement as barriers to these activities. Based on these findings, a study has been funded to investigate primary prevention in primary care practice settings. This study is designed to determine whether training physicians to counsel patients to stop smoking or training them as well as reimbursing them for counseling will result in a larger percentage of patients who quit smoking than will the standards physician talk to a patient who should stop smoking.

Conferences. This year the NCHSR/HCTA sponsored two conferences to develop health promotion and disease prevention research agendas. The first, the Conference on Health Promotion and Disease Prevention

* As of December 14, 1984, the National Center for Health Services Research was renamed the National Center for Health Services Research and Health Care Technology Assessment (NCHSR/HCTA).

for Children and the Elderly, developed guidelines to address the health issues for these special populations. The second conference, Iatrogenic Disease and Geriatric Medicine, was designed to stimulate research and identify additional areas needing research.

Dissemination. NCHSR/HCTA disseminates the results of its studies through published papers, reports, books, seminars, and conferences and by publishing syntheses of major research findings. The Center's distribution list includes key Federal, State, and local policymakers; business coalitions; professional societies; and members of the research community. Reports of key findings are also publicized through the popular press.

Office of International Health

The Office of International Health (OIH) provides leadership, formulates overall policy, and assures coordination of the Department's international health activities. Each PHS agency is involved in international prevention-related activities. The OIH serves as the official liaison agency of the U.S. Government on technical matters with international health organizations, most notably the World Health Organization (WHO), the Pan American Health Organization (PAHO), and the United Nations Children's Fund (UNICEF). The Public Health Service actively promotes and supports many prevention-related programs of these organizations. These include the WHO Expanded Program on Immunization, which has as its goal the immunization of all children in the world by 1990; the Tropical Disease Research Program; and the Essential Drugs Program. Following efforts begun in 1980 to formulate a U.S. strategy and plan of action for implementing domestic activities to reach the WHO goal of "Health for All by the Year 2000," the United States has joined other WHO Member countries in monitoring progress in implementing the strategies and in evaluating the impact on health status of the people. Disease prevention and health promotion remain the major objectives of the U.S. strategy.

OIH Prevention Highlights

U.S.-Federal Republic of Germany Bilateral Health Agreement. The National Heart, Lung, and Blood Institute is collaborating with German scientists in the design and planning of a multicenter German Cardiovascular Disease Prevention Study and a National Health Survey. The survey is providing information necessary for the evaluation of the effectiveness of the community intervention centers employed as part of the disease prevention study. Survey data on morbidity and mortality are being gathered using reporting criteria strictly comparable to those used in U.S. health surveys. Standardized protocols and methodology manuals for the intervention centers have been developed with the help of U.S. experts. Cooperative activities on hypertension are also ongoing under the programs with the Prople's Republic of China, Japan, the U.S.S.R., and Yugoslavia.

U.S.-People's Republic of China and U.S.-Japan Health Cooperation. Studies of the epidemiology and etiology of cancer are ongoing under several cooperative relationships, including those with China and Japan. The work with China includes a nutrition intervention trial and case-control study in a high-risk area for esophageal cancer and a case-control study for lung cancer in Shanghai. The studies in China present unique opportunities to investigate the etiologic factors involved and offer the hope of developing cancer-prevention measures in both countries.

U.S.-India Health Cooperation. Research directed toward prevention of blinding eye diseases is an important component of the cooperative program with India. An estimated 5 million people in India are blind and an additional 20 million have significantly impaired vision because of cataracts. About 17 million persons in both developed and developing countries have severe visual loss from cataracts. The objective of the study in India is to identify risk factors and assess their importance in the development of senile cataracts. Special emphasis is being given to nutritional and dietary factors.

Interagency Agreements With AID. Another important dimension of the PHS's prevention activities internationally is the work being carried out under several interagency agreements with the Agency for International Development (AID). The Centers for Disease Control is cooperating with AID in a major project in Africa to assist countries in controlling diphtheria, pertussis, tetanus, polio, measles, childhood tuberculosis, diarrhea1 diseases, and malaria. Work is ongoing in Cameroon, the Congo, Gambia, Ivory Coast, Zaire, Togo, and Ghana. In 1984, the Office of International Health signed an agreement with AID to provide for the development and application of new and improved vaccines, which can be applied to developing country health problems. Initially, the Centers for Disease Control will be engaged in human diploid measles vaccine studies, and NIH's National Institute of Allergy and Infectious Diseases will be engaged in studies of Rhesus Rotavirus vaccine.

Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA)

The Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) is the Federal agency specifically mandated to prevent and reduce alcohol abuse and alcoholism, drug abuse, and mental and emotional illness. ADAMHA conducts and supports research into the causes of these diseases and disorders and develops new approaches for prevention and treatment. With passage of the Budget Reconciliation Act of 1981 (P.L. 97-35), most of the resources used for prevention services, program development, and capacity building were incorporated into the Alcohol, Drug Abuse, and Mental Health Services Block Grant. States must use at least 20 percent of the alcohol and drug abuse block grant funds for prevention and early intervention.

ADAMHA Prevention Highlights

Publication of the "Prevention Activities of the Alcohol, Drug Abuse, and Mental Health Administration, Fiscal Year 1983, Report to Congress." In June 1984, the agency submitted to Congress the first annual report on the prevention activities of its three Institutes: the National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse, and the National Institute of Mental Health. This report details the history of the agency's prevention research planning efforts, describes the 10 prevention-related research announcements released during 1983, and provides summaries of the 118 extramural prevention research projects supported by the three Institutes during FY 1983. Each ADAMHA Institute also supported a number of research development activities (e.g., technical reports and workshops) designed to help the alcohol, drug, and mental health fields identify areas for preventive intervention research. The ADAMHA Institutes were also involved in multiple information dissemination and technical assistance activities related to the prevention of alcohol and drug and mental health disorders.

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

The long-range goal of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) is prevention of alcohol abuse and alcoholism through research and education programs that are designed to identify causes of alcohol problems and methods to prevent or treat alcohol abuse and alcoholism. NIAAA also provides research findings to those responsible for providing prevention, treatment, and rehabilitation services in communities. The Institute's major facility for collecting and disseminating data and information is the National Clearinghouse for Alcohol Information (NCALI). Each year NIAAA answers about 100,000 requests for alcohol information from the general public, parent groups, and citizen activists, as well as from researchers and clinicians in the health and safety fields. NCALI also produces a quarterly magazine, ***Alcohol Health and Research World,*** which contains summaries of research findings applicable at the local level. Some of the more recent editions have focused on alcohol and blood sugar disorders, youth treatment programs, children of alcoholics, and alcohol and the elderly. NCALI also publishes nontechnical summaries on topics of particular interest to clearinghouse users. These ***In Briefs*** cover a wide range of issues, such as the psychological effects of alcohol, alcohol and the military, and alcohol and the family.

NIAAA Prevention Highlights

Safety Initiative. In 1984, NIAAA announced plans to lead a national drive against alcohol-related trauma. The Institute, in conjunction with the National Institute on Drug Abuse, will develop a long-term strategy to expand its accident prevention activities and will work with various public and private organizations to reduce alcohol and drug-related accidents on a national scale. Despite the variety of settings in which accidents occur, a common thread is the frequency with which alcohol is

involved. Most Americans have become aware of the dire results in death and injuries of drinking and driving, but few realize that alcohol use is also implicated in many other types of accidents, as well as crimes, suicides, and family abuse. Between one-third and one-half of all adult Americans involved in accidents, crimes, and suicides had been drinking alcohol. The prevalence of alcohol use in such a high percentage of accidents indicates that they might be reduced in number and severity through well-organized private and public action. For example, new laws, stronger law enforcement, and new developments in science and technology have already helped to reduce drunk-driving accidents nationwide. A key element of NIAAA's new alcohol and safety program is the development of collaborative relationships with Federal and State agencies, private organizations, research and technology institutions, community action groups, and the media to support the goal of reducing alcohol and drug-related accidents. The NIAAA program will include extensive research regarding alcohol and safety, conferences and workshops, and development of intervention strategies.

NIAAA Prevention Research. The NIAAA has awarded a grant to establish the Prevention Research Center in Berkeley, California, for the purpose of conducting studies of environmental approaches to the prevention of alcohol-related problems. These studies will, for example, examine the usefulness of interventions by persons (e.g., bartenders, family members) who have contact with high-risk drinkers; analyze the effect of raised legal drinking ages on consumption and alcohol-related problems; and study high school alcohol problems. NIAAA also is supporting prevention-related grants in the areas of genetics, psychobiology, fetal alcohol effects, risk factors, social and health consequences, and safety, among others.

The FY 1983 report to Congress (see ADAMHA Prevention Highlights) describes a number of important findings relevant to alcohol abuse, for instance, the finding that heredity plays a significant role in the development of harmful drinking behaviors and in affecting individual sensitivity to alcohol's injurious effects. This finding offers the possibility of better defining biological subtypes of alcohol abusers and of identifying potential alcoholics early before they develop serious alcohol problems or alcoholism. The report also cites studies that have found that amounts of alcohol often drunk socially (two or three in an hour) can cause significant impairment in the skills required for driving, flying, and other complex performance. Recent evidence also indicates that time of day can make a difference in how seriously one's performance is affected and that alcohol and tobacco have a greater combined effect on auditory alertness than when used separately. New studies show that pedestrians who have been drinking also have much higher risk of being injured or killed in a traffic accident. Those who drink also are more likely to be the victims of crime.

Secretary's Initiative on Teenage Alcohol Abuse. In 1983 a series of 15 regional treatment conferences were convened to train program administrators to assess the need for and to design comprehensive treatment services for youth. 1983 was the second year of a multi-year initiative to combat alcohol problems of teenagers. In its first year, the initiative sponsored 10 regional conferences, which resulted in more than 450 new or expanded prevention programs in schools, programs which are described for replication in a guidebook entitled *Prevention Plus: Involving Schools, Parents, and the Community in Alcohol and Drug Abuse Education.* Also available is the summer 1983 edition of NCALI's *Alcohol Health and Research World,* which describes a number of youth treatment approaches. The regional conferences were followed in 1983 and 1984 with national conferences, led by the Secretary of Health and Human Services, along with the Secretaries of the Departments of Transportation and Education, to draw wide attention to the need for drinking and driving prevention programs for youth. The uniqueness of these two conferences lies with the fact that in some cases the conference participants were youth who shared their ideas and programs. Given that some high-risk teenagers may decide to rebel against authority by smoking or using alcohol, peer programs may be an effective prevention measure.

Public Education Programs. In 1985 and 1986 NIAAA will work with State alcohol and drug abuse authorities and prevention specialists, the health community, parent groups, citizen activist groups, other national voluntary organizations, and the private sector to develop a public education program for early teens and those who influence their lives. The program will focus on refusal skills and reinforcement for preventing early use of alcohol. In December 1984 NIAAA participated in the Department of Transportation's National Drunk and Drugged Driving Awareness Week, an initiative to prevent traffic accidents and fatalities during the holiday season. As part of this effort, NIAAA reviews and selects local and State public service announcements for reproduction and re-release nationally. NIAAA also contributes to the development of those public service messages of the Healthy Mothers, Healthy Babies Public Information Program (see OASH Prevention Highlights) that aim to prevent the consequences of substance abuse and use of cigarettes by pregnant women.

Dissemination of Prevention Efforts. NIAAA assists interested State and local communities in the development of new effective prevention projects and implementation of already tested prevention models through various technology transfer modes. One of the most unique mechanisms is the partnership among the three ADAMHA Institutes and the National Prevention Network. The network is comprised of alcohol and drug abuse State prevention designees. Information is shared about exemplary intervention strategies and research findings about environmental issues that impact on prevention and prevention programs. The network also plays a major role in the development and dissemination of the Institute's public education campaign messages and materials. NIAAA's research dissemination effort also provides a feedback channel regarding alcohol research issues and needs.

National Institute on Drug Abuse

The National Institute on Drug Abuse (NIDA) supports knowledge development and provides technical assistance in drug abuse prevention. Since the advent of the block grant program, NIDA has worked to develop program capacity within the States by offering technical assistance that focuses on community mobilization and coordination between the public and private sectors; knowledge development through funding research projects, special studies, or surveys; development of scientific findings concerning drug use trends; and dissemination of information to the scientific community and the general public. NIDA currently supports drug abuse prevention efforts in four principal areas: prevention research, technical assistance, community resource mobilization, and public information and education.

NIDA Prevention Highlights

Prevention Research. For the past 7 years, evaluation of drug abuse prevention strategies targeted at youth and their families has been a NIDA priority. NIDA has supported research to determine the effects of specific strategies to prevent and reduce the onset of drug abuse and related social problem behaviors. Research findings indicate that drug use by adolescents results not from lack of knowledge, but from the complex interaction of cognitive, psychological, social, and environmental factors. Thus, NIDA's prevention research program is designed to encourage the development of more effective drug abuse prevention programs based on a research foundation in the behavioral sciences. Especially promising are prevention approaches based on social learning and problem behavior theories. One intervention approach sensitizes youth to pressures from their peers, family, and the media to use tobacco, alcohol, and marijuana. This strategy is aimed at helping youth develop specific techniques for resisting or "saying no" to such pressures. Another approach focuses on broader personal and social skills training strategies, including a variety of communication and decision-making exercises. This new generation of drug abuse prevention programs provides the basis for some degree of optimism. These approaches have been found to be effective in preventing or delaying the onset of smoking for as much as 3 years. Preliminary findings also indicate that these approaches can prevent alcohol and marijuana use over the short-term. NIDA is now concentrating much of its research program toward developing and assessing prevention approaches based on the current knowledge about family and peer influences.

Project Pyramid. During the past 8 years, Project Pyramid had disseminated the latest findings in prevention technology, provided technical assistance to State and local prevention programs, and sponsored training workshops for State agencies. Under this project, major prevention publications have been developed, including ***Parents, Peers and Pot; Parents, Peers and Pot II: Parents in Action; Adolescent Peer Pressure; Preventing Drug Abuse in the Workplace;*** and *Prevention Resources,* a biannual publication that compiles current state-of-the-art findings and resources.

Multicultural Initiative. NIDA has launched a new drug abuse prevention program aimed at Blacks, Hispanics, American Indians, and Asian Americans. This new national drug prevention effort-called the "Multicultural Initiative"-focuses attention on the ethnic minority drug problem, encourages research into the needs of ethnic minority communities, and leads to new drug abuse prevention programs. Plans developed for the initiative were the result of meetings and consultation with representatives of multicultural groups. A conference of multicultural scientists was held, and recommendations were made regarding epidemiological research, prevention research, and treatment research; these recommendations will serve as guidelines for the direction of NIDA's Multicultural Initiative program. A key part of the program is "The Community Initiative." The specific objective of the Community Initiative project is to assist local communities, national organizations, families, and youth organizations to devise and implement prevention programs.

Parent Action Groups. One of the major developments in drug abuse prevention in recent years has been the rapid growth of parent action groups which seek to reduce drug abuse among youth. The parent groups work to create a climate in which the community as a whole, including the schools, is actively concerned about drug use and establishes broad prevention systems. There are now well over 4,000 organized groups of parents working to promote an environment in which children are getting "don't do drugs" messages from parents, schools, the media, and the community at large. NIDA has published a variety of materials for the use of parent groups, has provided technical assistance, and has convened regional conferences and family collaboration workshops designed to support the movement and increase coordination among the States.

Media Activities and Information Services. NIDA supports a number of public education and information media campaigns to provide information about drug abuse prevention. The "Just Say No" campaign, launched in the fall of 1983, enlists parental support in encouraging young people aged 12 to 14 to resist peer pressure to use drugs. The second phase of this campaign, to be launched in January 1985, will direct its message to inner-city youth and their parents. Another campaign featured National Broadcasting Company (NBC) television personalities in public service announcements with the message, "Don't Be a Dope" by doing drugs. This campaign also included five mini-documentaries and a drug abuse quiz program. In the 1984 sequel to the campaign, NBC television personalities incorporated the "Just Say No" theme. NIDA also assisted Peoples Drugstores in the development of its public education program for parents, "Drug Abuse: Spot It/Stop It," a campaign begun in September 1983 and composed of drug and alcohol flyers, print ads, and radio spots. NIDA-sponsored films on drug abuse prevention are available to organizations

and individuals nationwide. NIDA also provides drug prevention information through its National Clearinghouse for Drug Abuse Information, a 4,500-item drug prevention repository available to researchers and the public through a toll-free telephone line. The Clearinghouse distributes more than 2 million publications each year and provides technical assistance and material support to the Drug Abuse Communications Network, which provides access to drug abuse information to State and local clearinghouse and information centers.

National Institute of Mental Health

The National Institute of Mental Health (NIMH) conducts and supports research into the causes, prevention, and treatment of mental and emotional disorders. Special areas of research include schizophrenia, severe depression, child mental health, mental health aspects of crime and delinquency, minority group mental health, worksite problems, mental health of the aging, and psychopharmacology. NIMH trains mental health workers, distributes mental health information, and collects and disseminates relevant statistical data. Prevention research and prevention-related information dissemination have become increasingly important aspects of overall NIMH efforts. Within NIMH, prevention matters are concentrated in two places: The Office of Prevention and the Center for Prevention Research. The Office of Prevention, within the Office of the Institute Director, operates in collaboration with other staff functions relating to policy development, planning, and budget. It helps plan and coordinate the programs required to carry out the provisions of Section 455(d) of the Public Health Service Act, which includes designing national goals and establishing national priorities for the prevention of mental illness and the promotion of mental health; encouraging local entities and State agencies to achieve these goals and priorities; and developing and coordinating Federal prevention policies and programs and assuring increased focus on the prevention of mental illness and the promotion of mental health.

The Center for Prevention Research, within the Division of Prevention and Special Mental Health Programs, encourages prevention research to develop and assess early preventive interventions to diminish or reduce mental disorders, serious behavioral dysfunctions, and significant emotional distress of persons and populations at risk. The Center supports programs of research, demonstrations, and training through research and training grants, fellowships, cooperative agreements, contracts, and conferences. It also is responsible for developing, communicating, and disseminating information on the utilization of significant research results. Other units of the Division of Prevention and Special Mental Health Programs are concerned with the prevention of violent and aggressive behavior-including domestic violence, the prevention of sexual assault of women and children, suicide, affective disorders, childhood psychopathology, and schizophrenia-and with the identification of at-risk populations who would benefit from preventive interventions.

NIMH Prevention Highlights

Prevention Research. In FY 1983, the NIMH awarded 100 extramural grants in the following categories: disaster, trauma and violent behavior; stress; marital disruption; children of disturbed parents; high-risk infants and children; other special populations including minorities and women; work and mental health; depression and suicide: and health promotion, coping, and skills training. In addition, the ADAMHA-sponsored New Investigator Research Award in Prevention is a program to encourage new investigators to pursue prevention research and research methods in the mental health field, thereby expanding the scientific and clinical knowledge base of prevention theory. Research funded by this program includes the study of depression in aged Native Americans, in married women, and in Black men and women. In FY 1983, NIHM participation in ADAMHA-initiated prevention research (a) to explore the commonalities and differences among risk factors for alcohol, drug, and mental health problems and their prevention in the work place and (b) to study the prevention and intervention in the development of alcohol, drug, and mental health disorders in children and adolescents.

Preventive Intervention Research Center (PIRC). Multidisciplinary Preventive Intervention Research Centers (PIRCs) are a key NIMH-sponsored mechanism for the development of knowledge on early preventive interventions, the refinement of the identification of risk factors, and the advancement of prevention research methodology. The PIRC program supports research activity in a clinical, academic, or community setting, or in an appropriate collaborative relationship between two or more such settings. Each center is required to contribute to the national pool of prevention research scientists by providing supervised work experiences for a minimum of two preceptees each year from the mental health and related fields. In addition, each center is required to prepare a systematic plan for the dissemination of its research findings. Five PIRCs are currently funded by the Center for Prevention Research.

Other Research and Training Efforts. NIMH funds numerous other research programs, the largest of which is a multi-site risk factors program called the Epidemiological Catchment Area Collaborative Program. The studies of this program have surveyed 18,000 Americans representing the community population and another 2,500 persons in nursing homes, chronic hospitals, and prisons in order to provide information on prevalence, incidence, and risk factors. NIMH also funds research, training, and development of public education materials to assist women and children to avoid sexual assault. With NIDA and NIAAA, NIMH supports research at the Oregon Social Learning Center, where procedures are being developed for early identification of boys at risk for future delinquency. NIMH's Emergency Mental Health Study Section funds

research on interventions to reduce the negative mental health consequences of major disasters. Also funded by NIMH is research that assesses ways to reduce the emotional and behavioral problems of children of disrupted families. Research initiatives for the future include prevention of psychological sequelae to severely injured accident victims and their families; preventive interventions for depression; longitudinal data archives for identifying risk factors; and study of the development of attitudes and behaviors that promote health.

Prevention ***Workshops.*** During FY 1983, NIMH conducted workshops focused on prevention research development and knowledge transfer. Workshops were held on the following topics: primary prevention research relevant to the design of State mental health programs; depression prevention research: the potential and the limits of psychological interventions; ethics and primary prevention; assessing and promoting health family functioning; primary prevention of aggressive and violent behavior; preventing health risk behaviors and promoting coping with illness; preventing stigma-how the media shows mentally ill people; coping with mental stress-the potential and the limits of exercise intervention; medical anthropology-implications for stress prevention; the utilization of mutual support groups as a prevention approach for victims of personal violence; roles of the core mental health professions in preventing and reducing the incidence of Black homicide; and a decade of progress in primary prevention-retrospective and prospective analyses.

In addition, Research Planning Workshops were convened to evaluate the knowledge base for specific prevention research areas and to identify the readiness of the field to conduct preventive intervention research. Topics for these workshops included prevention research on the assessment, correlates, and treatment of disabling anger and on nutritional approaches to prevention. In FY 1983, the Center for Prevention Research initiated and conducted four workshops for minority researchers and researchers working with minority populations. These workshops were designed to provide didactic training as well as consultation and technical assistance in the development of prevention research grant proposals. Four regional workshops-supported by NIMH, the Office of Refugee Resettlement, and the Office of Refugee Health Affairs-were conducted to address the mental health needs of the Southeast Asian refugee populations (Laotian, Cambodian, Hmong, and Vietnamese). These workshops were designed to meet the urgent demand from practitioners and from Southeast Asian communities for technical assistance regarding mental health preventive intervention approaches and for model programs. The workshops also served to increase the dialogue between users and providers of mental health services to achieve appropriate and acceptable services. A comprehensive sourcebook on the results of the workshops and on the latest research in this area is forthcoming.

Training for Prevention Research and Services. Many of NIMH's research training programs prepare individuals to conduct research on the prevention of mental health problems. The focus of training may cover such broad topics as psychopathology, normal life-span development, risk factor concepts and measures, evaluation, and the ethics of preventive intervention, or it may be more directed toward specific problems such as health and behavior, environmental psychology, or child and family mental health. Several prospects supported by the Center for Studies of Antisocial and Violent Behavior focus on prevention of intra-family violence and aggressive behavior and on the development of preventive service programs. The Center for Studies of the Mental Health of the Aging supports research training that focuses on the prevention of unnecessary disability as a consequence of mental illness or dementia in the elderly.

NIMH clinical training programs also stress prevention. The largest and most successful prevention training effort is a national program, the Primary Mental Health Program (PMHP), for early detection and prevention of young children's school adjustment problems which, if unattended, may lead to maladjustment, school failure, and destructive behavior. Some 500 schools in 150 school districts nationwide use the PMHP model to collectively screen 50,000 children and bring intensive helping services to 10,000 youngsters each year. The Primary Mental Health Program uses procedures for early detection and prevention that have been developed from the documentation of more than 100 research studies.

Centers for Disease Control (CDC)

The mission of the Centers for Disease Control (CDC) is to prevent unnecessary morbidity and premature mortality and to improve the quality of life. CDC's programs focus on (a) the prevention of disease, disability, and death associated with occupational hazards; (b) chronic and environmental disease prevention; (c) the prevention and control of infectious diseases; (d) immunization; (e) the control and prevention of sexually transmitted diseases; and (f) the prevention of illness and death through improvements in health practices and behaviors. CDC also provides epidemiologic and laboratory expertise, services, and training to local, State, national, and international disease and injury prevention efforts. In addition, CDC is the lead agency for assuring the implementation of the 1990 Objectives for promoting health and preventing disease in the areas of immunization, sexually transmitted disease control, surveillance and control of infectious diseases, fluoridation and dental health, injury prevention, and occupational safety and health.

CDC Prevention Highlights

Prevention Research and Development Grants. Through the prevention research and development program, authorized by Section 301 (42 U.S.C. 241) of the Public Health Service Act, CDC can investigate the contemporary diseases and health hazards that are priorities of the 1990 national health objectives, accelerate the application of prevention technology, and transfer validated technological advances to health practitioners. The program couples CDC's unique capabilities with the scientific skills of the academic community and the creative energies of practitioners in health departments, hospitals, other health-related organizations, and the private sector. In FY 1984, the initial year of the prevention research and development grants program, CDC is supporting 10 projects, all of which address areas highlighted in the 1990 Objectives. These projects include a study of the extent to which third-party coverage encourages the use of sealants to prevent dental caries; assessment of the feasibility of conducting fitness studies in low-socioeconomic-status populations; development of model surveillance systems; and a study to develop specifications for a hazardous chemical containment laboratory.

Preventive Health and Health Services Block Grant. To provide States with funds for preventive health services for individuals and families, eight programs were consolidated into the Preventive Health and Health Services Block Grant. The uses of the block grant include supporting comprehensive public health services, community-based risk reduction programs, detection and prevention of high blood pressure, emergency medical services, rodent control, community fluoridation, home health services, rape prevention and crisis services, and other prevention programs proposed by individual States. For FY 1983, 59 grants were awarded to 50 States and 9 other jurisdictions.

Center for Environmental Health (CEH)

The goal of the Center for Environmental Health (CEH) is to prevent or control environmentally related health problems occurring outside the workplace. To accomplish this, the Center conducts programs designed to assist the public health community in the surveillance, investigation, analysis, prevention, and control of environmentally induced health problems such as cancer, birth defects, injuries, environmental hazards, and related chronic diseases. The Center also serves as the coordinating point in the Public Health Service Environmental Impact Statements (in accordance with the National Environmental Policy Act) and for radiation emergency planning to better respond to accidents such as the Three Mile Island nuclear reactor leak.

CEH Prevention Highlights

Surveillance of Adverse Reproductive Outcome. The Birth Defects Branch of CEH monitors the incidence

and distribution of over 200 birth defect categories through two major surveillance systems-the National Birth Defects Monitoring Program and the population-based Metropolitan Atlanta Congenital Defects Program. The surveillance programs also serve as a basis for epidemiologic research, development and evaluation of prevention strategies, and provision of technical assistance to State and local health departments.

Vietnam Veterans Birth Defects Study. Agent Orange, a defoliant used in Vietnam, has been suspected of causing birth defects in children of U.S. servicemen who served in Vietnam. A major study was conducted to determine if Vietnam veterans are at increased risk of fathering children with birth defects. The most important conclusion to be drawn from the study is that the data collected contain no evidence to indicate that Vietnam veterans have had a greater risk than other men for fathering babies with defects when all types of serious structural birth defects are combined. This study cannot prove that some factor associated with service in Vietnam was or was not associated with the occurrence of rare types of defects, defects in the babies of selected individuals, or defects in the babies of small groups of veterans.

Genetics. Environmental factors interacting with the unique genetic constitution of each individual can induce genetic damage in both somatic cells and germ cells. The genetic changes in somatic cells may lead to cancer, and gene damage in germ cells may result in pollution of the human gene pool causing an increase in genetic diseases in future generations. The Genetics Laboratory is concerned with the measurement of susceptability to cellular and genetic damaging agents. Assay systems for the quantitation of chromosome breakage, sister chromatid exchange, chromosomal fragile sites, abnormal gene products, and cellular metabolic derangement are being devised which will allow susceptibility to be defined under controlled conditions. Field testing of improved assay systems applied to exposed population groups will allow the definition of those having a high risk of damage from environmental hazards.

Injury Prevention. Unintentional injuries cause an estimated 87,000 deaths outside the workplace each year. For several years, CEH's Chronic Diseases Division has applied epidemiologic principles to the study of the causes and prevention of injuries and has implemented its findings in community injury prevention demonstration projects. In 1984, an injury prevention project has been initiated in an economically depressed, minority community. A second collaborative project in Dade County, Florida, supports epidemiologic studies of injuries among the elderly.

Detection and Measurement of Toxic or Hazardous Substances. As more toxic chemicals are used by industry and agriculture, the threat of human exposure becomes greater. The Clinical Chemistry Division is developing and validating new and more advanced technology for assessing exposure and health effects in individuals potentially exposed to chemical agents. The mass spectrometry facilities of the Clinical Chemistry Division allow the detection and measurement of chemical substances such as polybrominated biphenyls (PBBs), polychlorinated biphenyls (PCBs), dioxins, and other compounds at trace levels in environmental and biologic samples. The Clinical Chemistry Division is now a state-of-the-art laboratory in the analysis of adipose tissues at the 1 part per trillion level for 2,3,7,8-tetrachlorodibenzodioxin (TCDD).

Natural Disasters. Weather and geologic phenomena, such as heat waves and volcanic eruptions, pose hazards to the health and well-being of the community. The CEH has responded to these environmental problems by evaluating their impact on human life. During and immediately after the Mount St. Helen's volcanic eruption, the Center undertook evaluation of the health effects from ash inhalation and developed studies to analyze the long-term effects on health and the environment.

Center for Health Promotion and Education (CHPE)

The Center for Health Promotion and Education (CHPE) is concerned with preventable diseases and conditions where human behavior is the cause and where personal choice about behavior change is a solution of the preventable problem. CHPE carries out its work in collaboration with Federal and non-Federal Government agencies, international and private sector organizations, and professional societies in health promotion and education research. Areas of involvement are reproductive health, including family planning; nutrition; smoking, alcohol; physical fitness; stress; violence; and injuries. CHPE's activities in support of this mission include epidimiologic behavioral and evaluative research; disease and risk factor surveillance and data analysis; demonstration programs involving innovative health promotion and education approaches and methodologies; and capacity building involving technical assistance, training, and consultation activities as well as encouragement of increased societal interest in health promotion and education activities.

CHPE Prevention Highlights

Behavioral Risk Factor Surveillance. CHPE has provided resource assistance to 19 States and the District of Columbia to enable them to monitor the prevalence of major behavioral risk factors associated with leading causes of premature death and disability in the United States. One or more of the six behaviors monitored-cigarette smoking, alcohol misuse, lack of exercise, failure to wear seatbelts, overeating, and failure to adequately treat hypertension-are linked to 9 of the 10 leading causes of premature death in this country. Behavioral Risk Factor Surveillance, accomplished through telephone surveys using random digit dialing, enables the States for the first time to assess prevalence of risk-taking behaviors in both the general adult population and the elderly. It also provides the States with a

unique capability to define overall health risks, to identify special needs of target populations, to guide allocations of block grant and State funds, and to monitor progress toward the achievement of selected 1990 national health objectives.

Nutrition Surveillance. CHPE works with 44 State health departments to establish a system to monitor continuously the status of major nutrition-related health problems in the United States. Thirty-two States and the District of Columbia have operating nutrition surveillance systems. The approximately 2,200 service delivery clinics of the system furnished data from 1,220,000 screening and follow-up visits during FY 1983. This surveillance activity allows the States to monitor the nutritional status of high-risk children and to direct resources toward those at highest risk. The surveillance data are also able to document trends in nutritional status among children from low-income families in the United States and to monitor progress in achieving selected 1990 national health objectives. Pregnancy nutrition surveillance, designed to monitor the prevalence of nutrition-related health problems among high-risk pregnant women, is under way in 13 States and the District of Columbia.

Reproductive Health. CHPE has initiated a National Infant Mortality Surveillance project to determine the maternal and infant factors related to birthweight and associated with infant mortality. CHPE is continuing major epidemiologic studies on the safety of oral contraceptive use and the short- and long-term safety of tubal sterilization operations. CHPE is assisting State health departments to develop the capacity to use surveys to rapidly assess local area needs for family planning services and to manage clinics and evaluate programs. During FY 1983, a special study to assess fertility and family planning in Puerto Rico was conducted in collaboration with the National Institute of Child Health and Human Development. Data from this survey should be ready for analysis by the end of FY 1984. Surveillance activities are maintained in the areas of sterilization, abortion, ectopic pregnancy, teenage pregnancy, and pregnancy-associated mortality.

Violence Epidemiology. Since its establishment within CHPE in 1983, the Violence Epidemiology Branch (VEB) has focused on research and prevention in the areas of interpersonal violence and suicidal behavior. Within these areas, the VEB has two priority areas for research and prevention: suicide among young persons 15–24 years old and homicide among young Black men 15-24 years old. Of particular interest in the field of suicide is understanding the phenomena behind the apparent "clustering" of suicide cases, especially among young men. The general research approach is to (a) identify and characterize groups and individuals at high risk for victimization; (b) identify the causes of interpersonal violence; and (c) use information about risk factors and causes to design, implement, and evaluate programs to prevent the perpetration of violence.

Health Education Technical Assistance. During FY 1984, the Division of Health Education (DHE) initiated a technical assistance program to enable State health departments to assist communities in planning, implementing, and evaluating health promotion efforts. Under the program, States can help communities use data resources to prioritize health problems and set community-specific standards for health promotion; evaluate their programs; conduct Health Risk Appraisals; conduct behavioral/educational diagnoses to establish, maintain, or change health behaviors; conduct community awareness campaigns; and promote school health education.

Behavioral Epidemiology. CHPE has established a branch in the Division of Health Education to study the relation of behavior to health and the distribution and determinants of the behavior itself. Focusing initially on physical activity and exercise, CHPE has coordinated the publication of a set of papers on the epidemiologic and public health aspects of physical activity and exercise. Prepared by experts in the field, these papers describe the current state of our knowledge, identify the most important questions, and recommend future research and surveillance projects.

Health Risk Appraisal. During FY 1984, focal points for Health Risk Appraisal (HRA) activities were established in 20 State health departments. Cooperative agreements were established between the Division of Health Education/CHPE and two schools of public health to assist HRA requestors in States not having a focal point. This decentralized network can transmit general and technical information to agencies and organizations desiring to use HRA in their health promotion efforts.

School Health. During FY 1984, Teenage Health Teaching Modules, designed to complement the widely used School Health Curriculum and Primary Grades Curriculum Projects, were distributed by many organizations interested in school health. The module design of these educational tools allows them to be tailored to the specific needs or interests of the teenage audience. Also widely disseminated were health education material charts listing resources available from the local officials of national organizations.

Community Health Centers Evaluations. During FY 1984, the Division of Health Education/CHPE completed a qualitative evaluation of health promotion activities in nine community health centers (CHC) in various geographic locations in the United States. The project was designed to determine (a) how health promotion programs were positioned and carried out in CHCs, (b) what benefits were realized by clients and the community at large, (c) how health promotion programs influence the image of CHCs, and (d) what methods were used to assess health behavior and health status of clients.

Community Recognition. In FY 1984, the CHPE's Division of Health Education coordinated the first Secretary's Community Health Promotion Award pro-

gram. This awards program seeks to improve community health by stimulating greater participation in health promotion programs by voluntary and professional associations, community groups, and public health agencies. From a pool of 161 programs from 40 States and territories, 35 communities received awards for excellence in community health programs.

Center for Infectious Diseases (CID)

The mission of the Center for Infectious Diseases (CID) is to prevent unnecessary infectious disease morbidity and mortality through research and services. The Center conducts a national program to improve the identification, investigation, diagnosis, prevention, and control of infectious diseases, including the evaluation of candidate vaccines of public health importance. The Center provides, on the basis of unmet national needs, laboratory diagnostic services to State health departments and other qualified health care providers and provides for the transfer of new diagnostic technologies to the public and private sectors.

CID Prevention Highlights

Acquired Immunodeficiency Syndrome (AIDS). The CID is directing resources to develop specific screening and diagnostic tests for AIDS, to investigate AIDS transmissibility factors, and to continue to support AIDS surveillance. (See OASH Prevention Highlights, AIDS Public Information Plan, for a description of PHS-wide prevention activities concerning AIDS.)

Hepatitis B. The hepatitis B virus infects the liver and may lead to chronic hepatitis and liver cancer. In 1983, the annual incidence of hepatitis B infections was estimated to be 63 cases per 100,000 population. Approximately 200,000 new infections occur each year, requiring 15,000 hospitalizations and resulting in 4,000 deaths. Direct medical and work-loss costs from hepatitis B total over $350 million per year. CID has completed studies on the epidemiology of hepatitis B in high-risk groups in the United States and has continued long-term follow-up of participants in the HBV vaccine trial, to better define and update recommendations for vaccine use. Ongoing studies of the HBV vaccine have demonstrated a high efficacy that persists for at least four years after vaccination. Epidemiologic studies indicate 57 percent of hepatitis B patients belong to one of four major high-risk groups: homosexual men, heterosexual contacts of hepatitis B cases or carriers, drug addicts, and health care personnel. The HBV vaccine is targeted at the high-risk groups. However, the impact of vaccinating these high-risk individuals is unknown since about 40 percent of hepatitis B cases are not traceable to a recognized source. CID is investigating outbreaks to determine if groups other than those in current high-risk categories can be classified as being at excess risk.

Toxic Shock Syndrome. Toxic shock syndrome, an illness that primarily affects young women of menstrual age, continues to be under study by CID. Other studies have documented an association of ***Staphylococcus aureus*** as the probable etiologic agent of the disorder and have identified factors influencing carriage and production of a toxin that may be responsible for the disease. The toxin has been purified and shown to produce many features of the disease in an animal model.

Fingerprinting. The ribonucleic acid (RNA) oligonucleotide fingerprint technique has been applied extensively as a means of elucidating the origin and spread of epidemics caused by arboviruses (e.g., dengue, yellow fever, and certain types of viral encephalitises) as well as the stability of arbovirus vaccines. This technique, which provides an analysis of the genetic material of an arbovirus, allows detailed comparisons between virus strains of different origins and represents an extremely powerful molecular tool for answering epidemiological and virological questions. For example, recent studies have shown that dengue virus strains indistinguishable by all other means can be classified according to their geographic origin.

Hybridomas. Considerable progress has been made in the development and application of this new technology, which makes it possible to produce virtually unlimited supplies of a wide variety of antibodies of desired specificity. CID uses hybridomas and other molecular biology techniques to develop new methods of diagnosis, produce highly specific serologic reagents, identify etiologic agents, and prepare purified microbial antigens. Monoclonal antibodies produced against cytomegaloviruses, herpes simplex viruses, and varicella-zoster (chickenpox) viruses are now being evaluated for their usefulness in detecting variations in strains. Monoclonal antibodies have proven useful in epidemiologic typing of *Legionella* and in a rapid diagnostic test (antigen detection) for Legionellosis. They are also useful for specific identification of the staphylococcal toxin associated with toxic-shock syndrome.

Hospital Infections. Approximately 2 million nosocomial infections are occurring in acute care facilities each year; they affect an estimated 5 percent of all hospitalized patients annually. Many of these infections are caused by bacteria that are resistant to commonly used antimicrobial agents; patients with these infections generally require treatment with newer, more expensive, and more toxic drugs. As patient care technology continues to become more complex, the importance of certain agents as a cause of nosocomial infections increases (e.g., methicillin-resistant ***Staphylococcus aureus,*** coagulase-negative staphylococci), recently identified agents are implicated (e.g., *Legionella* sp., JK diphtheroids), and the need to define the relative importance of infrequently recognized causes of nosocomial infection (e.g., anaerobic bacteria, viruses) increases.

An additional 9 percent of nosocomial infections would occur without hospital infection control efforts. CID is estimated to have directly, or indirectly, contributed to preventing at least 20 percent of these infections

through prevention and education programs and direct assistance. A key element of this accomplishment has been the publication and dissemination of the Guide*lines for the Prevention and Control of Nosocomial Infections.* CID's National Nosocomial Infections Study (NNIS) has established nationwide surveillance of the occurrence of hospital infections. A major finding of this surveillance effort is the emergence of virulent bacteria resistant to commonly used antibiotics. Techniques are being developed to analyze the genetic mechanisms by which the bacteria develop resistance. When these mechanisms are understood, a strategy can be formulated to prevent the continued emergence of resistance.

Influenza. Epidemics of influenza in the United States exact a high toll in morbidity (up to about 30 percent attack rate) and mortality (up to 50,000 excess deaths per epidemic). Because the majority of severe morbidity and mortality occurs in the elderly, who represent a rapidly increasing segment of the population, the impact of future epidemics may be worse. In 1984, as the foundation for new approaches to the problem of influenza prevention, the Public Health Service Advisory Committee on Immunization Practices identified target groups who should be at high priority for influenza vaccination programs. The target groups include residents of nursing homes and non-institutionalized persons with severe cardio-pulmonary disease. To facilitate implementation of the Advisory Committee's recommendations, the CID is initiating a demonstration project to evaluate the cost-effectiveness to nursing home operators of recruiting temporary nursing staff to organize vaccination programs. Also, a training program is being developed to inform nursing home operators and staff of the need for influenza vaccination of residents, and methods with which to organize successful programs. Prevention of influenza is the focus of several other new CID program areas, including evaluation of the use of antiviral agents to safely control influenza in institutions containing high-risk persons, research into the molecular biology of live attenuated influenza A vaccines, and a field study to evaluate the increased immunogenicity of inactivated influenza B vaccine in the elderly when a supplemental dose of antigen is given at the time of routine vaccination.

Legionellosis. An estimated 50,000–100,000 cases of legionellosis occur annually in the United States. The number of deaths attributed to the pneumonic form is approximately 7,200 per year. CID investigations have shown that attack rates are highest in males, with the risk approximately three times greater for males, and in older age groups. Other CID studies have identified such risk factors as cigarette smoking and heavy alcohol consumption. Water appears to be the natural habitat of *Legionella,* but further information is needed to define the various modes of transmission, their relative importance, and optimal control measures. In addition to evaluating control to reduce the occurrence of legionellosis, CID is also exploring further development of diagnostic tests for legionellosis that can be performed rapidly.

Pneumococcal Disease. An estimated 400,000 cases of pneumococcal pneumonia occur in the United States annually. In the elderly and those with underlying diseases, the case fatality ratio is between 25 and 35 percent. CID monitors stereotypes of pneumococcus-causing disease for evaluation of appropriate vaccine formulation. Data from CID contributed to a recent reformulation of the vaccine to include 23 serotypes, increasing potential coverage to 87 percent of pneumococcal disease in the United States. Recent CID studies of over 200 isolates from vaccinated persons showed that vaccine efficacy is 60 to 70 percent in persons with intact immune responsiveness, including the elderly. CID is implementing a program to increase immunization levels with pneumococcal disease in order to decrease morbidity and mortality caused by this agent.

Center for Professional Development and Training (CPDT)

The Center for Professional Development and Training (CPDT) plans, directs, and coordinates a program to develop and sustain a strong national workforce in disease prevention and control. In carrying out this mission, CPDT collaborates with other CDC programs, State and local health departments, academic institutions, and national and international health agencies. The Center conducts research and demonstration activities to determine methods for increasing the effectiveness of disease prevention and control programs and provides leadership in updating and improving the performance of public health professionals in these programs. In addition, the Center provides assistance to States in the establishment, maintenance, and improvement of State and local health department training and technology transfer programs and collaborates with schools of public health and departments of preventive and community medicine to develop and implement improved learning programs for disease prevention and health promotion.

CPDT **Prevention Highlights**

Development of Professional Manuals. CPDT, in collaboration with the Center for Environmental Health, has developed a manual entitled *System for Prevention, Assessment, and Control of Exposures and Health Effects From Hazardous Sites.* The manual, which has been distributed to all State and large city health departments, is designed to help these agencies respond to environmental health problems. The manual includes a flowchart that defines in sequence the tasks involved in prevention and control of environmental health problems and guidelines for performing each task. It also includes job aids for setting priorities among hazardous sites in an area and convenient reference tables on chemicals commonly found at such sites. Similar manuals for appropriate State health officials

have also been developed by CPDT in collaboration with other CDC programs. These manuals include the ***Diabetes Program Handbook*** and ***Designing and Implementing a State-Based Nutrition Surveillance System.***

Performance-Based Management Systems. Performance systems state precisely the work essential to the achievement of program objectives. The components of a system are (a) specific and measurable objectives, (b) work functions to achieve the objectives, (c) standards of performance for each major work function, and (d) an assessment mechanism for determining if objectives are being achieved and essential tasks performed correctly. Performance systems have been developed and implemented in collaboration with State and local health departments in three program areas: acute infectious disease control, hypertension control, and prevention of low birth weight and prematurity. Expansion of these systems to additional States is planned, as is the development of performance systems for the control of chronic, degenerative health problems.

Homestudy Services. A continuing education service is provided for persons who are interested in increasing their knowledge and skills in the public health field and related areas. Each year, more than 8,000 individuals participate in the 13 Homestudy courses offered by CPDT. Courses cover a variety of topics, including community hygiene, disease control, epidemiology principles, environmental protection, community health analysis, water fluoridation, microbial ecology of foods, and basic mathematics.

Center for Prevention Services (CPS)

The Center for Prevention Services (CPS) plans, directs, and coordinates national programs to assist State and local health agencies in carrying out their responsibilities for preventive health services. CPS provides financial and technical assistance to aid State and local health departments in establishing and maintaining prevention and control programs directed toward such health problems as vaccine preventable diseases, sexually transmitted diseases, dental disease, diabetes, and tuberculosis. It also administers a national quarantine program to protect against introduction of diseases from other countries and conducts research to evaluate and improve the application of current technology to the prevention of disease.

CPS Prevention Highlights

Childhood Immunization. The National Immunization Initiative, conducted from April 1977 to October 1979, was the foundation for the highest immunization levels ever obtained in the children of the United States. Intensive immunization activities, concentrating first on school-age children, resulted in the following protection levels for entrants into the 1982-1983 school year: 97 percent for measles and rubella; 97 percent for polio; 96 percent for diphtheria, tetanus, and pertussis; and 96 percent for mumps. These levels led to record low numbers of cases for measles, mumps, and rubella and near record low cases for the other childhood vaccine-preventable diseases in 1983.

Tuberculosis. Approximately IO million persons, or about 5 percent of the Nation's population, have tuberculous infection and are at risk of developing the disease, tuberculosis. Between 20,000 and 25,000 individuals develop clinical disease annually. The Centers for Disease Control carries out a variety of activities aimed at controlling tuberculosis and reducing morbidity and mortality. Among these are consultation and technical assistance to State and local health departments; national coordination and promotion of strategies, standards, policies, and recommendations for screening, diagnosis, treatment, and prevention; training for tuberculosis workers; surveillance of overall national tuberculosis problems as well as specific problems, such as drug resistance and disease in children, in certain geographical areas or population groups; and publication of morbidity, mortality, and program management data. In addition, CDC conducts research to develop improved methods of tuberculosis control and provides assistance to State and local health departments in the implementation of these methods.

Sexually Transmitted Diseases. Each year more than 10 million cases of sexually transmitted disease (STD) threaten the health of Americans, with the highest incidence among adolescents and young adults. The increasing spectrum of these diseases constitutes a major public health problem. The magnitude of the gonorrhea and chlamydia epidemics, the increasing problems of resistance to antimicrobials, the continuing syphilis problem, and the serious complications of these diseases are of major concern to prevention and control personnel. During FY 1983, Federal grant funds supported disease monitoring, screening, sex partner referral services, public education and health promotion efforts, and other STD outreach efforts in all States. These efforts prevented an estimated 168,500 cases of uncomplicated gonorrhea, 26,500 cases of gonococcal pelvic inflammatory disease, and 6,100 cases of syphilis. CDC has established 10 geographically dispersed STD prevention/training clinics. In addition, CDC conducts applied research toward further characterizing the pathophysiology, host response, and epidemiology of these diseases to permit the development of improved diagnostic, prevention, and control methodologies. CDC also publishes and distributes clinical standards and management systems information and sponsors medical symposia to improve STD knowledge in the community. In the face of the expanded matrix of STD and the limited pool of resources, the health consumer-especially the STD patient-will have to play a more extensive role in the intervention process. Both primary and secondary prevention must be emphasized.

Diabetes Control. As many as 10 million Americans may be affected by diabetes mellitus, a chronic disease

characterized by high blood glucose due to insulin deficiency or diminished insulin effect. It leads to serious complications, including blindness, kidney failure, and heart disease and remains one of the 10 leading causes of death in the United States. The goal of the CDC Diabetes Control Program is to reduce morbidity, mortality, and cost burdens from the preventable complications of diabetes at the community level. Toward this end, diabetes control programs have been established with CDC funding in 20 States. These 20 cooperative agreement States conduct a series of demonstration projects and special studies to define problems and contributing factors, conduct and evaluate interventions, and establish mechanisms for integrating, expanding, and replicating proven effective control strategies into community practice. Also, CDC provides on a national scale policy direction, leadership, technical assistance, training, program development, operational research, and program management expertise.

Dental Health. CPS continues to be a national focus for fluoridation activities and to provide technical assistance and consultation to States upon request. In addition to the fluoridation of water supplies, CPS advocates (a) school-based, once-a-week fluoride mouthrinse or daily flouride tablet regimens; (b) in public health programs, when appropriate, the application of adhesive sealants to those teeth susceptible to caries of the pit and fissure variety; and (c) community-based periodontal disease prevention measures. CPS works closely with the Association of State and Territorial Health Offices to provide compehensive dental health data through their voluntary reporting system. CPS also has awarded a contract with a third-party firm to evaluate the impact of a prepaid dental service plan reimbursement on the use of pit and fissure sealants in private dental practices.

Refugee Health. Each year approximately 40,000 refugees from Southeast Asian areas of high disease incidence are entering the United States. CDC has implemented disease prevention programs overseas that insure that those with current tuberculosis complete treatment before resettlement, that virtually 100 percent of arrivals are current with age-specific immunizations, that those with untreated venereal disease are treated before departure, and that pregnant females and unaccompanied minors are screened for hepatitis B surface antigen before departure. Soon after arrival in the United States, nearly 90 percent of refugees receive a current health assessment to detect other health problems of public and personal health significance. The Center for Prevention Services will continue to develop prevention programs that ultimately will result in a world-wide, standardized refugee screening, documentation, and notification system that will maintain the high level of protection afforded the U.S. populace.

National Institute for Occupational Safety and Health (NIOSH)

The National Institute for Occupational Safety and Health (NIOSH) is ***a*** prevention-oriented research institute with two overall goals: (a) to produce significant, valid information by identifying occupational safety and health hazards and conducting research and field studies on these problems and (b) to transmit this information to those who need to know in order to protect the worker and control work-related disease and injury. Section 20 of the Occupational Safety and Health Act of 1970 mandates NIOSH to conduct research, and Section 21 mandates NIOSH to conduct training and education. NIOSH is specifically authorized to recommend to the Occupational Safety and Health Administration (OSHA) and to the Mine Safety and Health Administration (MSHA) standards for the protection of workers. In all activities, the emphasis is on prevention, intervening before worker exposure occurs.

NIOSH Prevention Highlights

Sentinel Health Events. NIOSH has published a list of Sentinel Health Events (occupational) as a basis for physician awareness and public health surveillance. The present list of Sentinel Health Events encompasses 50 diseases, disabilities, or untimely deaths that are occupationally related. The list may provide the impetus for epidemiologic or industrial hygiene studies and serve as a warning signal that materials substitution, engineering control, personal protection, or medical care may be required.

Ten Leading Work-Related Diseases and Injuries. Of the 226 national health objectives for 1990, 20 are in the area of occupational safety and health. In responding to the challenge of these objectives, the senior scientists at NIOSH developed a list of the 10 leading work-related diseases and injuries. The list, produced in 1982, was based on the known or suspected frequency of occurrence of each disease or injury, the severity of the condition in individual cases, and its amenability to prevention. NIOSH working groups of scientific experts were formed in 1984 for each of the first five categories of leading work-related diseases and injuries for the purpose of defining the specific problems and drafting national prevention strategies. NIOSH working groups on the other five categories are being formed to meet with the same intent. Identification of the 10 categories in rank order and descriptions of NIOSH prevention activities in each category follow.

1. *Occupational Lung Diseases*

Occupational lung diseases head the list of the leading work-related diseases and injuries. The potential is high for workplace exposure to substances causing such disorders as pneumoconiosis, emphysema, chronic (industrial) bronchitis, and lung cancer. For example, an estimated 1.2 million workers may be exposed each year to silica dust alone, and as many as 18.8 million workers may be exposed to potentially hazardous concentrations of asbestos. Cadmium is another source of increased risk of respiratory cancer among U.S. workers. Recognition of occupational lung diseases is often difficult because of the long latency period and because other

factors, such as smoking, may contribute to the disease process. Determining the contributing factors and preventing the occurrence of these lung diseases are high priorities of the Institute.

2. *Musculoskeletal Injuries*

Because many work activities are physical in nature, the musculoskeletal system is highly susceptible to a variety of occupational injuries and illnesses. A series of NIOSH laboratory studies isolated ergonomic factors that would ease musculoskeletal and visual discomfort in the operation of video display terminals. Back injuries may account for one fifth of all workers' injuries, and repetitive-motion tasks may cause cumulative trauma disorders, such as carpal tunnel syndrome. In 1982, musculoskeletal injuries accounted for 18 percent (580,000) of the occupational injuries treated in U.S. emergency rooms. As the average age of the work force increases over the next several decades, the frequency and impact of these conditions are expected to increase.

3. *Occupational Cancers*

More than 1,000 new chemicals are introduced into the working environment each year; few of these are regulated or controlled in the workplace. As a result, occupational cancer related to exposure to these chemicals may increase in the future. If as few as five percent of all new cancers in the United States annually involved industrial exposure, 20,000 cancer deaths could be considered occupationally related. Some cancers identified as occupationally related are leukemia; mesothelioma; and cancers of the bladder, kidney, lung, liver, nose, skin, and stomach. Studies to determine whether an association exists between disease and worker exposure to dioxin are ongoing. A NIOSH study of 44,000 workers in large chemical manufacturing plants that produce ethylene oxide (Et0) for hospital supplies will address single Et0 exposures and known combinations of exposures. Another study in progress is examining the effects of low levels of Et0 on chromosomes. The association between chromosomal changes and eventual disease outcomes, such as cancer, is not known at present.

4. *Amputations, Fractures, Eye Loss, Lacerations, and Traumatic Deaths*

Annually, about one of every 10 workers employed in the private sector sustains an occupational injury. In 1982, work-related accidents in the United States were responsible for 11,200 deaths, and about 1.9 million workers experienced disabling injuries. Injuries in the workplace in 1982 cost the United States $31.4 billion, or 1.1 percent of the gross national product. NIOSH has established the Fatal Accident Circumstances and Epidemiology (FACE) Program to collect and analyze scientific data about environmental and behavioral factors that may increase the risk of fatal injury. NIOSH also conducts research on machine safety and, for example, has recommended computer-related hazard controls for the safe operation of robots and ergonomic-design considerations to protect lathe operators from injury.

5. *Cardiovascular Diseases*

Cardiovascular disease continues as the number one cause of death among U.S. adults. Various substances in the workplace (e.g., carbon disulfide and carbon monoxide) are known to be specifically toxic to the heart and its allied blood vessels, and occupational stress has shown a definite association with cardiovascular disease. Although data are lacking on the extent of an occupational etiology or the role of occupational factors in cardiovascular disease, the magnitude of the problem emphasizes the critical need for research in this area. The Institute conducted a cohort study of workers exposed to nitroglycerin in the explosives and munitions industries and found that deaths from ischemic heart were significantly greater than expected.

6. *Disorders of Reproduction*

Although the portion of reported reproductive effects related to occupational exposure cannot be determined at this time, many substances found in the workplace are known to be toxic to the reproductive system. An estimated 3 million married couples have some type of reproductive impairment unrelated to contraceptives, and more than 560,000 infant deaths, spontaneous abortions, and stillbirths occur each year in this country. The March of Dimes estimates that seven percent of all live births annually (200,000 infants) involve some kind of defect, whether benign or totally disabling. Although causes for 65 to 70 percent of these developmental defects are unknown, a significant percentage may be occupationally related. The Institute sponsored an international symposium on the reproductive toxicity of glycols and glycol ethers; reports of laboratory studies indicate that these widely used chemicals cause adverse reproductive effects, including resorption of litters, reduced litter size, stillbirths, development dysfunction in offspring, and male infertility.

7. *Neurotoxic Disorders*

Although major episodes of neurotoxicity related to occupational exposures have dramatized the dangers of neurotoxic effects, diverse, minor occurrences throughout industry involve significantly larger numbers of workers. These effects, ranging from mild to severe, include motor changes (inability to walk, tremors, or loss of fine coordination), sensory changes (loss or reduction in vision, hearing, or touch), and cognitive changes (judgmental lapses, personality changes, or loss of alertness). Such effects are particularly serious because of the irreversibility of most damage to the central nervous system and the inability of the nervous system to replace lost functions. At a workshop held in conjunction with the World Health Organization (WHO), an international consensus was achieved on recommendations for diagnosing, measuring, treating, and preventing neurotoxic illness. A monograph resulting from this workshop will be published by WHO in early 1985.

8. *Noise-Induced Loss of Hearing*

Noise-induced deafness is one of the top occupational health problems worldwide. Census Bureau figures esti-

mate that 14.9 million workers are in industries associated with noise-producing processes. Previous NIOSH research has shown that many workers are receiving less than half the attenuation reportedly provided by their hearing protectors. Loss of hearing among firemen is the subject of current NIOSH research. Noise-induced hearing loss, which isolates workers from their daily contacts, is usually irreversible and cannot ultimately be corrected with hearing aids. The cost of compensation for this disability in the decade of the late 1970s and early 1980s may reach $1 billion.

9. *Dermatologic* ***Conditions***

Skin conditions, including dermatoses, scaldings, chemical burns, and contusions, are common occupational disorders accounting for more than 40 percent of all reported job-related illnesses. Causes of occupational skin disorders can be chemical, mechanical, or physicial, and include plant poisons, biologic agents, or combinations of these; the most frequent cause is chemicals. Ethylene dibromide (EDB) is an example of a chemical that was found to cause severe dermatitis among forestry workers who removed plastic sheets from pine logs that had been treated with EDB to kill pine beetles. As many as 25 percent of the job-related skin disorders may result in lost work days. Estimated annual costs of occupationally related skin disorders range from $20 to $30 million to over $100 million.

10. ***Psychologic Disorders***

Increasing evidence has linked job stress and psychologic impairment. Stress in the workplace may be produced by undue job demands and/or adverse working conditions and may result in emotional/behavioral disturbances, mental illness, increased cardiovascular disease, digestive disorders, and increased incidence of injury. Annual productivity losses from stress-related mental illness are estimated at $17 billion and projected changes in the workplace and the work force may increase this figure in the future. NIOSH has conducted three worksite-intervention studies designed to demonstrate the feasibility and effectiveness of worker training in stress management. The results of these and other studies will form the basis of recommendations for establishing stress-reduction programs at the worksite.

Epidemiology Program Office (EPO)

The Epidemiology Program Office (EPO) serves as a national focus for epidemiology and surveillance by promoting the dissemination and application of available knowledge and technology in regard to epidemiologic and surveillance methods and by developing new methodologies. The Office is the focal point at CDC for the collection, analysis, and communication of basic disease surveillance information, and it provides assistance to States in analyzing the effects of various factors on the incidence and severity of preventable disease. The office publishes the ***Morbidity and Mortality Weekly Report*** *(MMWR)* as well as other surveillance reports. EPO also maintains and enhances the Epidemic Intelligence Service (EIS) through recruiting, training, and assigning EIS officers throughout CDC and in State and local health departments. EPO conducts the annual EIS Conference each April at CDC.

EPO Prevention Highlights

Epidemiologic Investigation. CDC epidemiologists conduct epidemiologic investigations and surveillance activities throughout the United States. During FY 1983, EIS officers based in Atlanta participated in 93 major investigations related to disease outbreaks and emergencies related to the environment. Officers assigned to State and local health departments were involved in approximately 643 disease outbreaks, surveillance projects, and special studies. Of the disease outbreaks investigated, 21 involved more than 100 ill persons.

Disease Surveillance and Reporting. New methods of data collection and analysis in both infectious and noninfectious disease surveillance are being developed. CDC is pilot testing with 10 State health departments the rapid transmission of morbidity data between computers. CDC is also working with State health departments in developing innovative approaches to disease surveillance in selected communities using computer and sentinel reporting. In 1983, CDC introduced the quarterly publication, *MMWR* ***Surveillance*** *Summaries,* which highlights in each issue surveillance activities and findings for about four different public health problems. CDC has also expanded the distribution of the *MMWR* through commercial telecommunication networks.

International Health Program Office (IHPO)

The International Health Program Office (IHPO) coordinates the administration and evaluation of CDC's international programs for research, development, and technical assistance. These programs help create both new and improved disease control measures. The IHPO assists international organizations such as the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the United Nations High Commissioner for Refugees (UNHCR), as well as other nations, to develop measures that either prevent or control diseases or solve environmental health problems. It also coordinates responses to requests for emergency assistance. The IHPO assists foreign visitors to CDC, coordinating the planning of their activities and training schedules and arranging accommodations and special services for them.

IHPO Prevention Highlights

Global Expanded Programme on Immunization. IHPO is closely associated with the Expanded Programme on Immunization (EPI), which is coordinated by WHO. In strengthening the EPI aspects of public health practice in developing nations, the program encourages immunizations for six vaccine-preventable diseases-measles,

petussis, tetanus, poliomyelitis, diphtheria, and tuberculosis-particularly during the first year of life.

Global Control of Diarrheal Diseases. This WHO-coordinated program, in which IHPO takes part, is intended to reduce morbidity and mortality associated with diarrhea from birth through the fifth year. Methods include strengthening selected national public health capabilities, particularly through oral rehydration treatment for young children who have diarrhea. In collaboration with the Agency for International Development, CDC has undertaken the Combatting Childhood Communicable Diseases (CCCD) project. This project assists sub-Saharan African governments to reduce childhood mortality through improved disease control programs for malaria, diarrhea1 disease, and immunization. The CCCD project provides technical assistance and commodities needed for program activities. In addition, African health workers receive training related to the disease control programs. JHPO staff are stationed in Africa to work directly with the governments that are participating in this program. In addition to its training and operational efforts, CCCD supports research to identify the most effective and practical methods of treatment through oral rehydration. CCCD support helps these African nations to prepare protocols for evaluating the extent of cause-specific morbidity and mortality in children as well as for evaluating the results of measures intended to control diarrhea1 disease.

Water Supply and Sanitation. WHO and UNICEF coordinate a global effort to improve the quality of water and sanitation available in developing countries. CDC and its IHPO have been involved in an aspect of this program-the control of dracunculiasis (guinea worm). This is a parasitic disease that causes severe pain and disability to an estimated 10 to 48 million persons, the majority of whom are in West Africa and India. Safe drinking water for persons who would otherwise be at risk will prevent infection, and effective control programs might eliminate the disease.

Crisis Response Activity. The Crisis Response Activity provides liaison for and coordination of CDC involvement with national and international agencies that respond to natural or manmade crises outside the United States. Famines, earthquakes, volcanic eruptions, floods, disease outbreaks, and social disruptions are among the situations that arise. CDC selects from its staff persons who have the epidemiologic, technical, and/or management skills needed to cope with each crisis situation and prepares them for crisis work. Recent examples of crisis-response activity have included assessment of the nutritional status of children in drought-stricken areas of sub-Saharan Africa; assessment of the health and nutritional status of Nicaraguan-Indian refugees in Honduras and of Afghan refugees in Pakistan; assessment of public health conditions in Lebanon and in post-coup Grenada: investigation of cholera outbreaks in equatorial Guinea; and establishment of a system for disaster surveillance in Bolivia.

Global Epidemic Investigation System (GEIS) Program. This organization assists other nations in developing programs for training their own epidemiologists. GELS is modeled after the highly successful, national Epidemic Intelligence Service program, which in the past 33 years has trained more than 1,200 epidemiologists in the United States. GEIS proposes 2 years of service-oriented preceptorial field-training in applied epidemiology. Programs have been developed in Thailand (1980), Indonesia (1982), and Mexico (1984). Others will soon be initiated in Taiwan and possibly in Saudi Arabia, and more countries are consulting GEIS about developing programs. Variations on work already accomplished will include training for non-physicians and centralized regional programs for surrounding countries.

Laboratory Program Office (LPO)

The goal of the Laboratory Program Office (LPO) is to assure quality laboratory test results for use in both preventive and diagnostic health care. To this end, LPO provides training and consultation in good laboratory practice, laboratory management and resource utilization, and assistance in the identification and it provides resolution of performance problems within U.S. clinical and public health laboratories. In addition, the Office provides basic quality assurance systems (performance monitoring, needs assessment and standards development, and proficiency testing) in support of the licensure and certification function that resides within the Health Care Financing Administration.

LPO Prevention Highlights

Monitoring and Improving Performance in Rabies Testing. Prevention of human rabies as a result of exposure to a suspected vector is dependent upon accurate laboratory testing. In cooperation with the Center for Infectious Diseases, LPO organized a program (Competency Assurance Through Monitoring and Assistance) of external quality control to test and certify the competence of virtually all the laboratories in the United States engaged in rabies diagnosis. A unique part of the program is the provision of immediate, on site technical consultation to the few laboratories identified as deficient (only six in 1984) to assist them in correcting their problems and to facilitate their reexamination and certification. The testing and assistance program will be repeated, as needed, at 18- to 24-month intervals.

Improvement Efforts Directed To ward Low- Volume and Rural Laboratories. With the finding that small, low-volume laboratories perform, in general, with less proficiency than larger, high-volume laboratories and that the laboratory personnel in small labs in rural settings have little or no access to continuing education or other laboratory improvement opportunities, LPO initiated two pilot programs. The first program, conducted in cooperation with the University of North Dakota Medical School, consists of a nonresident, 3-

year Master's Degree Program in Clinical Microbiology designed to enable students to remain on their jobs and receive the lecture portion of their courses via telephone network from University faculty. Performance of diagnostic tests in these laboratories has improved significantly. The second CDC program consists of a number of In-Laboratory Study Courses designed to be used only in rural, low-volume laboratories for 1 or 2 hours per day, in increments of 2 to 4 days per subject. Initial results indicate marked improvement in test performance and numerous desirable changes made in routine procedures in the laboratories receiving the training.

Environmental Health Laboratory Services Assessment. This Task Force on Environmental Health Laboratory Practices was organized in 1983 to study State capacity and capabilities to provide surveillance and monitoring of health effects caused by workplace and nonworkplace environmental pollution. The ultimate goal of the Task Force is to develop recommendations for CDC, other Federal agencies, and States to follow in determining health risks related to environmental pollutants.

Institute on Critical Issues in Health Laboratory Practice. The Institute is a new program activity undertaken jointly with the University of North Carolina School of Public Health and the Association of State and Territorial Public Health Laboratory Directors. The Institute, conducted annually, is designed to provide an opportunity for health professionals to explore the implications of national health **issues** for the laboratory and its client groups and to develop requisite management, technical, and leadership skills. The topic for the 1984 Institute is "The Impact of Alternative Reimbursement Methods on Laboratory Practice."

Improving Isolation of* Neisseria gonorrhoeae.** Nine million tests for gonorrhea are performed annually in the 500 venereal disease laboratories alone, and additional tests are performed in other laboratories in the United States. Over 400 laboratories with various daily testing volumes are enrolled in a proficiency testing program initiated in 1976 for bacteriologic identification of N. ***gonorrhoeae. In 1976, an average of only 73% of participating laboratories with daily testing volumes of 12 or fewer specimens was able to successfully isolate and identify N. ***gonorrhoeae*** from the most difficult types of samples. This percentage increased to 92% by the end of 1983.

Enhancing Cancer Prevention by Improving Detection. Cancer is the second most common cause of death. The American Cancer Society estimates that in 1984, 870,000 new cases of cancer will be diagnosed and 450,000 cancer-related deaths will occur. Of these new cases, the Cancer Society estimates 55,000 will be invasive carcinoma of the cervix or cancer of the uterine corpus or endometrium, and 9,700 of the deaths will result from such lesions, even though the diseases will be readily detectable at curable, premalignant stages by a laboratory procedure that has been generally available for more than 40 years, the Papanicolaou examination. This relatively simple, inexpensive procedure provides a mechanism for detecting disease and predicting findings in more invasive examinations. Failure to eliminate cancer at these sites is due to clinical error in specimen collection, laboratory error in locating and correctly evaluating diagnostic cellular alterations, and the loss of patients to follow-up. The LPO has implemented a program of research to improve intralaboratory quality assurance systems and to develop more practical criteria and better methods for identifying those laboratories in which the level of practice is not satisfactory. A study of several large cytology laboratories identified the types of errors and some of the contributing causes of unsatisfactory practices and presented remedial recommendations that will enhance the reliability of cancer screening.

Agency for Toxic Substance and Disease Registry (ATSDR)

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, which established a fund through a system of tariffs on the manufacture of toxic substances, was passed by Congress to help States and local communities address the growing problem of dealing with toxic chemical spills and toxic waste disposal sites. Under the authority of the Act, the Department of Health and Human Services is responsible for the health aspects of the program, the lead for which has been delegated legislatively and administratively to the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR serves as a focal and coordinating point within the Public Health Service for implementing the health-related provisions of the Act, working with the Centers for Disease Control, the National Library of Medicine, the National Toxicology Program, and the Food and Drug Administration. ATSDR also works cooperatively with the Environmental Protection Agency and other Federal, State, and local agencies.

Food and Drug Administration (FDA)

The Food and Drug Administration (FDA) is the regulatory agency responsible for assuring that food is safe and wholesome; drugs, biological products, and medical devices are safe and effective; cosmetics are safe; and the use of radiological equipment does not result in unnecessary exposure to radiation. FDA approves new drugs, food additives, and certain medical devices before they can be marketed and conducts inspections of related manufacturing and processing plants. The agency issues public warnings when hazardous products are identified, and it is empowered to remove unsafe products from the market. FDA is authorized to initiate legal action in the event of misleading labeling. FDA's program activities are distributed among the Center for Drugs and Biologics, the Center for Devices and Radiological Health, the Center for Food Safety and Applied Nutrition, the Center for Devices and Radiological Health, the Center for Food Safety and Applied Nutrition, the Center for Veterinary Medicine, and the National Center for Toxicological Research.

FDA **Prevention Highlights**

Sodium. The specific initiatives for the sodium public education campaign for 1984-1985 are a result of the 1983 FDA/NlH survey entitled "The Public Response to the Sodium Content of Food." In addition to the new sodium labeling regulation published on April 18, 1984, other new program components include the following: (a) Encouraging physicians to convey to their patients written as well as verbal information about how to achieve and monitor a low-sodium diet. A copy of a new FDA publication, "A Word About Low-Sodium Diets," was mailed to 100,000 primary care physicians and cardiovascular specialists. The same mailing was also sent to the 7,000 members of the American Hospital Association and the 232 corporate members of the National Association of Chain Drug Stores. (b) Advising retail outlets on how to display modified sodium products to benefit interested consumers. And (c) conducting further public education efforts regarding the definition of ***milligrams-so*** that consumers have a better understanding of their daily sodium intake-and the definition of ***salt*** versus ***sodium-so*** that consumer understanding of the difference between these terms will be improved.

Reye ***Syndrome.*** FDA is continuing its comprehensive initiative to educate parents about Reye Syndrome during the 1984 flu and chicken pox season. The season's campaign not only emphasizes recognition of the symptoms of Reye Syndrome but also tells the public what is known about the possible link between development of the syndrome and salicylate administration. The campaign is designed to present all sides of this complex, unresolved scientific issue and to alert parents to the importance of early recognition and diagnosis of Reye Syndrome.

Health Fraud. The FDA's concentrated effort to combat health fraud through education includes a joint public education program with the Pharmaceutical Advertising Council in which three themes will be developed for use by all media over an 18-month period; a joint letter with the Council of Better Business Bureaus to the advertising managers of 9,300 newspapers and magazines offering assistance in checking for fraud in advertising copy on medical products; an exhibit on health fraud; and a slide show, videotape, and exhibit on dieting that warn consumers about fraudulent diet products and devices.

Center for Drugs and Biologics

The National Center for Drugs and Biologics was created in 1982 though a merger of Bureau of Drugs and Bureau of Biologics. The title of the new Center was changed to Center for Drugs and Biologics in March 1984 because use of the word ***national*** had created misperceptions about its range of activity and authority. The Center has the responsibility of assuring that all marketed biologics and drug products are safe

and effective for their labeled indications. Approval of products subject to control under the Federal Food, Drug and Cosmetic Act and Public Health Service Act is based on thorough review of extensive scientific data and test results submitted to the Center by the sponsor, usually the manufacturer, seeking to market the products. The Center's role includes monitoring the various industries involved in the manufacture and distribution of these products to assure the public that companies are meeting their responsibilities as prescribed in law and regulations.

Center for Drugs and Biologics Prevention Highlights

Acquired Immunodeficiency Syndrome (AIDS). FDA scientists hope to evaluate in clinical trials the effect of interleukin-2, the naturally occurring substance that may help fight the immunological deficiencies of AIDS victims. (See OASH Prevention Highlights, AIDS Public Information Plan, for a description of PHS-wide prevention activities concerning AIDS.)

Prescription Drugs Information: National Consumer Education Campaign. The FDA established the Committee on Patient Education (COPE) to provide a focal point for government agencies active in educating consumers about prescription drugs and to serve as a coordinator of private sector activities. FDA has through the committee coordinated the development and implementation of a variety of patient education programs designed to increase the awareness by patients and health professionals of the need for communicating information about drugs. FDA has also coordinated and supported the patient education activities of private sector groups such as the National Council on Patient Information and Education (NCPIE). NCPIE's "Get the Answers" campaign provided to large organizations for distribution a medical data card (wallet size) listing five basic questions patients should ask their health care practitioners. This medical data card has been viewed as a valuable tool to be used in patient education initiatives.

Drug Abuse Prevention. Because of the widespread abuse-even by school children and others who do not usually abuse drugs-of some over-the-counter (OTC) drug products, the FDA has declared that some OTC drug products will no longer be allowed on the market and will be subject to regulatory action under the new drug provisions of the Federal Food: Drug, and Cosmetic Act. The intended effect of this action is to eliminate misuse and abuse of these products. In the case of reported misuses by heroin addicts of pentazocine, a pain-reliever, in combination with tripelennamine, an antihistamine, the drug manufacturer requested approval of a new formulation of pentazocine and naloxone, a narcotic antagonist. FDA scientists approved the product for marketing under the brand name of Talwin Nx. This means that the product is still available for patients suffering from pain, but addicts who attempt to abuse the drug will experience withdrawal symptoms. This formulation has significantly reduced drug abuse of pentazocine.

Center for Food Safety and Applied Nutrition

The Center for Food Safety and Applied Nutrition conducts research, maintains data, and develops regulations and standards on the composition, quality, nutrition, safety, and purity of foods, food additives, and cosmetics. The Center also has the responsibility of checking labeling for accuracy. Effective food labeling can contribute to the Nation's health by helping consumers choose foods with the appropriate caloric and nutrient values. Because advances in technology have created more processed and fabricated foods, and because the relationship of nutrition to certain diseases is becoming better understood, accurate and informative labeling about a product's content and its other characteristics has even greater public health significance now than in the past. Furthermore, disease and other abnormal physiological conditions such as allergies compel many Americans to follow special diets. These people especially need informative food labeling. FDA is working with the food industry to promote voluntary listing of nutrition information on labels.

Center for Food Safety and Applied Nutrition Prevention Highlights

1990 ***Nutrition Objectives.*** The FDA is actively involved in research, education, and other nutrition programs related to achieving the 1990 national health objectives in the nutrition area (see ODPHP Prevention Highlights, Nutrition Initiative).

Lead. Lead is a toxic substance occurring in the environment and food which has been a matter of concern to FDA and other public health agencies for some time. The margin of safety of lead poisoning from dietary intake is believed to be adequate for adults but questionable for children. Top priority has been placed on reduction of lead in processed foods for infants. Additionally, data developed over the past several years indicate that lead crosses the placental barrier. FDA's emphasis has therefore been broadened to include all canned foods commonly eaten by women of child-bearing age. Largely as a result of FDA's programs, there has been a dramatic reduction in the average lead level of infant foods; lead concentrations are only about one-tenth of what they were in the early 1970s. These foods include infant formula, infant juices, pureed infant foods, and evaporated milk.

Food Sanitation: Evaluation of Processes Used for Canned Foods. Inadequate heat processing of low-acid canned foods can result in failure to kill the microorganisms that cause human botulism. To identify potentially inadequate processes before an outbreak occurs, FDA requires that domestic firms and foreign firms exporting canned foods to the United States register as

producers of these foods and that they provide information that can be used to judge the adequacy of each process they use. Currently 3,584 firms are on file as processors of low-acid or acidified canned foods, and they have filed a total of 107,340 processes.

Center for Devices and Radiological Health

The Center for Devices and Radiological Health was created in 1982 through a merger of the Bureau of Radiological Health and the Bureau of Medical Devices. The Center develops and implements national programs to protect the public health in fields of medical devices and radiological health. These programs are intended to assure the safety, effectiveness, and proper labeling of medical devices; to control unnecessary human exposure to potentially hazardous ionizing and nonionizing radiation; and to ensure the safe, efficacious use of such radiation. In the radiation area, the Center conducts research into the health effects of radiation, establishes and enforces standards for radiation-emitting products, develops recommendations on safe radiation practices, and conducts educational programs on radiation protection for health professionals and consumers.

In the medical device area, the Center classifies devices into various regulatory groups, depending on the degree of control necessary to insure each device's safety and effectiveness. The Center approves critical devices before marketing, requires the use of good manufacturing practices, and requires selected devices to meet specified performance standards. The Center also conducts research and testing related to medical devices, collects and evaluates data for device-related hazards, and conducts education programs for health professionals and consumers on the safe and effective use of medical devices.

Center for Devices and Radiological Health Prevention Highlights

Guidelines on Protecting Food From Accidental Radiation Contamination. The FDA has issued recommendations that provide State and local agencies guidance on when and how to protect food from accidental radiation contamination during radiation emergencies, such as nuclear power plant accidents and accidents involving the transportation of radioactive materials. The guidance includes basic criteria for determining whether the levels of radioactivity found in food after a radiological incident warrant protective action. It also provides specific suggestions on how to prevent further contamination or to restrict the use of food, if warranted, and general advice on the development and implementation of emergency actions. The levels of contamination at which action should be taken are set forth as Protective Action Guides (PAGs).

Criteria for X-ray Examinations. A major cause of unnecessary x-ray exams is a lack of scientific data to guide physicians in deciding when x-ray procedures are diagnostically warranted. FDA is working with clinicians and medical organizations to develop voluntary referral criteria for specific x-ray procedures. A Chest X-Ray Panel has developed five referral criteria statements that include recommendations against mandated routine chest x-ray screening exams, routine prenatal chest x-ray exams, routine hospital admission chest x-ray exams, chest x-ray screening exams for tuberculosis detection and control, and routine chest x-ray exams for occupational medicine. A Presurgical Chest X-Ray Panel has drafted a report that recommends that, based on the low yield of clinically significant information, preoperative chest radiography not be required as a routine for operating room admission. A Skull X-Ray Panel has drafted a report that addresses the overuse of plain skull films in the assessment of minor injuries, the relation between fracture and intracranial injury, and the diagnostic of intracranial injury in a patient with a minor head injury. Based on the patient's signs and symptoms, the report divides head injuries into three risk groups and recommends a different management strategy for each group.

A Pelvimetry Panel has developed a statement emphasizing the lack of efficacy of pelvimetry, an x-ray procedure which has been used to compare the size of the fetal head with the width of the mother's birth canal. This statement was adopted as policy by the American College of Radiology, and a similar statement was adopted by the American College of Obstetricians and Gynecologists. In addition, the pelvimetry statement served as the basis of a nationwide educational program sponsored by the Health Care Financing Administration.

Toxic Shock Syndrome Awareness. Since the Center for Disease Control's first report on an association between tampon use and the occurrence of toxic shock syndrome (TSS) in women, FDA has worked to increase the public's awareness of this disease. Since 1982, the Agency has required tampon manufacturers to label the outside of packages with a warning about the association between tampon use and TSS. Additional information on TSS is required on labeling inside the package. In 1983 the advice on using the least absorbency needed was included as a warning on the outside of packages. To get timely medical treatment, women must be educated to quickly recognize and report TSS symptoms to their doctors. Because adolescent girls have the highest risk of contracting TSS, FDA developed an educational program designed specifically for this age group. In pilot studies, FDA staff observed that students were interested in the subject and participated in the class. After evaluating the effectiveness of the pilot educational program, FDA is making the TSS program available to secondary schools nationwide.

Safety Alert Letters. The Center for Devices and Radiological Health (CDRH) has begun supplementing its normal regulatory activities used to protect the public from unsafe medical devices with safety alert letters sent to health professionals as soon as a device problem

is discovered. Specially marked to attract attention, the letters describe the hazard, report accidents resulting from the hazard, and suggest precautions that the device user can take to supplement action being taken by the device manufacturer to avoid further incidents. Since the system was begun in mid-1983, the Center has sent three such safety alert letters. The first letter warned hospital administrators about a hazard with electrically powered hospital beds with automatic bed-lowering controls. The second letter alerted hospitals to potential problems with special breathing system connectors for infants. FDA warned that coupling certain "low dead space" breathing system components could partially or completely obstruct the child's exhalation pathway. The third letter, sent to medical directors of dialysis centers, concerned the risk of severe hypersensitivity reactions in patients undergoing dialysis with new dialyzers (the "first-use syndrome"). The Center discovered that about 60 percent of the reported cases of severe reactions occurred with dialyzers that were rinsed using procedures other than those recommended by the manufacturer.

Center for Veterinary Medicine

Successful production of food animals through proper nutrition and disease prevention and treatment practices is a major reason for the United States' agricultural bounty. FDA's Center for Veterinary Medicine develops, conducts, and evaluates programs to ensure the safety and effectiveness of medicated and non-medicated feeds and veterinary drugs and devices used in this production. The Center also works with farmers and producers of food animals to ensure that feeds and drugs are used properly. Eighty percent of the meat-producing animals in the United States are raised on medicated feed, so the Center must be especially diligent to see that foods from animals are free from drug contamination. It has been rigid in prohibiting the use of the drug chloramphenicol in food animals because it can cause aplastic anemia in humans, and the Center has moved-through education and, where necessary, enforcement-to prevent improper levels of sulfa residues in the burgeoning veal industry. The Center also has attacked the residue problem in swine and has applauded the successful efforts of poultry, cattle, and milk producers in maintaining very low, acceptable drug residue levels in their animal food products. The Center has taken the lead in promoting voluntary compliance with FDA regulations and in preventing major nationwide contamination incidents through comprehensive national education campaigns among the agribusiness community.

National Center for Toxicological Research

Knowledge of the disease state, its cause, and its mechanism of action are important components of building a successful disease prevention program. The National Center for Toxicological Research (NCTR) was created to develop this knowledge with respect to harm caused to humans by toxic chemicals. NCTR is an interagency facility funded by the Food and Drug Administration and the Environmental Protection Agency, and it conducts research aimed at solving regulatory problems for FDA, the Environmental Protection Agency, the Department of Agriculture, the Consumer Product Safety Commission, and the National Institute of Occupational Safety and Health. The Center is developing both an understanding of the mechanisms of toxicity in humans and ways to measure the impact of those hazards on human health. Under this program, more reliable tests are developed for predicting genetic damage, neurotoxicity, carcinogenicity, reproductive and fetal toxicity, immunotoxicity, and cellular toxicity. NCTR aims to develop improved methods of extrapolating toxicity data from animals to humans and of measuring toxicity of chemicals alone and in combination with one another so that the regulatory agencies can better assess human risk. The Center performs comprehensive toxicological evaluations for selected chemicals of particular interest to FDA, EPA, and the National Toxicology Program (see OASH Prevention Highlights).

Health Resources and Services Administration (HRSA)

The Health Resources and Services Administration (HRSA) was created September 1, 1982, by way of a reorganization that combined the Health Resources Administration (HRA), the Health Services Administration (HSA), and the Office of Health Maintenance Organizations from the Office of the Assistant Secretary for Health. Its mission is to provide leadership and support designed to integrate health services delivery programs with public and private health financing programs, including the health maintenance organizations; support States and communities in their efforts to plan, organize, and deliver health care, especially to underserved areas and to mothers and children, migrant workers, and other groups having special health needs; administer the health services block grants, categorical grants, and formula grant-supported programs; provide or arrange for personal health services, including both hospital and out-patient care, to designed beneficiaries; administer programs to improve the utilization of health resources through health planning; provide technical assistance for modernizing or replacing health care facilities; provide leadership to improve the education, training, distribution, supply, use, and quality of the Nation's health personnel; and foster increased development, application, and utilization of health promotion and disease prevention measures.

The four bureaus in HRSA that carry out this mission are the Bureau of Health Care Delivery and Assistance (BHCDA), Bureau of Health Maintenance Organizations and Resources Development (BHMORD), Bureau of Health Professions (BHPr), and Indian Health Service (IHS).

Bureau of Health Care Delivery and Assistance (BHCDA)

The Bureau of Health Care Delivery and Assistance (BHCDA) assists States through program and clinical efforts to provide health care to underserved populations through Section 329/330 of the Public Health Service Act, Community and Migrant Health Centers, and through the Maternal and Child Health Services Block Grant. It provides through project grants to State, local, voluntary, public, and private entities funds to help these groups meet the health needs of special populations such as migrants, victims of black lung disease, and those in need of home health services. BHCDA also provides leadership and direction for the Bureau of Prisons' Medical Program, the National Hansen's Disease Program, the Federal Employee Occupational Health Program, and the CHAMPUS Program. It administers a comprehensive health program for designated PHS beneficiaries including active duty members of the Coast Guard, the PHS Commissioned Corps, and the National Oceanic and Atmospheric Administration. It also administers the National Health Service Corps program, which assures accessibility of health care in underserved areas through the placement of manpower into health manpower shortage areas.

BHCDA **Prevention Highlights**

Maternal and Child Health Services Block Grant. The Maternal and Child Health (MCH) Services Block Grant provides States with funds to support health services for mothers and children. States may use the funds allocated under this Block for maternal and child health services; preventive measures to reduce infant mortality and prevent disease; rehabilitation services for blind and disabled children; medical, surgical, and corrective services for diagnosis, hospitalization, and care of children who are crippled or who have potentially crippling conditions; hemophilia treatment centers and genetic disease counseling and screening projects; research and training projects; and other maternal and child health programs proposed by the States.

Forward Plan for Maternal and Child Health. During 1984, the Division of Maternal and Child Health (DMCH) issued a document entitled ***Forward Plan—Maternal and Child Health, Fiscal Year 1984-1989.*** This Plan attempts to provide a comprehensive frame-

work which can serve as a rational basis for decisions and recommendations made on the part of the States and Federal Government related to maternal and child health. The report outlines major issues and priorities in maternal and child health and clarifies DMCH goals, priorities, and future directions of health services for mothers and children as a basis for program planning and improvement at all levels of government. The Plan further elaborates on health promotion and disease prevention strategies in the programmatic areas of maternal and infant health, child health, adolescent health, and services for handicapped children.

Reducing Low Birth Weight and Infant Mortality. Despite great achievements in improving maternal and child health, there remain disquieting geographical variations and disparities between subpopulations in our Nation. Most notably are the high rates of infant mortality and low birth weight in a number of communities around this Nation. The Public Health Service, with DMCH and the National Institute of Child Health and Human Development as lead agencies, is developing a strategy to accelerate efforts in assisting State and local communities in preventing low birth weight. To assure that all women have access to quality prenatal care services, the DMCH and the National Health Service Corps (NHSC) have initiated a special effort to place highly trained medical personnel in areas of obstetric need. Approximately 153 counties with the poorest perinatal outcome and insufficient obstetrical personnel have been identified. Obstetrician-gynecologists serving in the NHSC will be assigned to practice sites in as many of these counties as is feasible.

Genetic Disease Services. During 1983, 27 area-wide genetic disease services grants were awarded to provide education, screening, and counseling services in 25 States plus the District of Columbia and Puerto Rico. In addition, BHCDA awarded four grants for the coordination of genetic services through the development of regional networks, and two awards were made for regional projects to develop counseling techniques for couples at risk for having a child with a hemoglobinopathy. BHCDA's National Center for Education in Maternal and Child Health reaches thousands of providers and consumers across the Nation with current information about genetic diseases as well as all other phases of maternal and child health activities.

Lead Poisoning Prevention. Lead poisoning prevention services continue to be provided in States under the authority of the Maternal and Child Health Services Block Grant. DMCH continues to support training, research and demonstration projects in this area. The New England Consortium of Childhood Lead Poisoning Program is a 3-year project supported by DMCH funds to assist States in the planning and management of childhood lead poisoning prevention programs in the New England region and neighboring States. Another project is attempting to provide a model for networking of community resources in a State lead screening program; it is also examining the relationship of undue lead absorption and iron deficiency, two conditions which often co-exist.

Promotion of Breastfeeding. In partnership with State and local health agencies, institutions of higher learning, professional and voluntary organizations, and other Federal agencies, the DMCH continues to provide leadership in the promotion of breastfeeding. Increasing the proportion of women who breastfeed their babies at hospital discharge is a national health objective in the nutrition area, and a number of DMCH activities are designed to support this objective. The DMCH helped fund the Surgeon General's Workshop on Breastfeeding and Human Lactation, held in 1984 at the University of Rochester. Workshop attendees developed recommendations for national strategies to facilitate breastfeeding. The BHCDA publication *Breastfeeding* was revised and reprinted, with the title A ***Gift of Love,*** as a joint publication of the American Academy of Pediatrics, the DHHS, the U.S. Department of Agriculture, the American Dietetic Association, the Children's Nutrition Research Center, and the San Diego Lactation Program. This publication is a component of the Healthy Mothers/Healthy Babies Professional Resources Package on breastfeeding promotion which is being disseminated to all States to assist in development of State and local efforts. Albert Einstein College of Medicine has been awarded a special demonstration project grant to increase the rate and duration of breastfeeding in low-income women in the Bronx. A research grant has been awarded jointly by the BHCDA/HRSA and NICHD/NIH to Johns Hopkins University School of Public Health to study determinants of infant feeding, breast versus bottle.

Nutrition. The BHCDA central and regional office public health nutritionists work in collaboration with State and local health agencies, other Federal agencies, educational institutions, and professional and voluntary organizations to strengthen and improve nutrition services as an integral component of comprehensive health care. Improving nutrition services for children with handicapping conditions is the focus of increased DMCH activity, including regional workshops for multidiscipline personnel involved in programs and services for handicapped children and a National Workshop on Nutritional Needs of Handicapped and Chronically Ill Children. A major emphasis of DMCH-supported nutrition training is prenatal nutrition. Prenatal nutrition is included in the curricula of long-term training programs in public health nutrition, maternal and child nutrition, and maternal and child health. It is also included in the curricula of short-term continuing education programs in maternal nutrition and prenatal/neonatal nutrition and specialized training in adolescent health. Trainees in these programs include not only nutritionists but also physicians, nurses, and other members of the health care team.

Accident Prevention and Injury Control in Children. In 1983 the DMCH assisted the American Academy of Pediatrics (AAP) in launching The Injury Prevention Program (TIPP)-a national injury prevention program designed to make anticipatory guidance counsel-

ing on injury prevention part of the routine pediatric health supervision visit. In 1984, the DMCH sponsored four regional workshops on Childhood Injury Prevention to nationally disseminate the findings of three prevention demonstration projects. The workshops were designed to (a) enhance the knowledge and skill of State Directors of Maternal and Child Health (MCH) and Crippled Children's Services Programs and their key staff involved in injury prevention and (b) assist them in developing effective State efforts in childhood injury prevention. Material from these activities is being prepared for an issue of *Pediatric* ***Clinics of North America,*** scheduled to be published early in 1985.

Adolescent Health Services. Special projects focusing on the health care needs of adolescents are being supported by the DMCH in collaboration with State MCH programs in 17 States. Effective methods of health promotion and disease prevention especially for hard-to-reach students are being developed in projects in Michigan and New York. In Wisconsin health education curricula are being designed to give students information and skills for developing health enhancing behaviors; in Maryland and Texas two projects focus on the relationships of behavior and lifestyles to health and the application of behavioral science knowledge to solving problems of children and youth. Comprehensive organized systems of health care for youth, including improved mechanisms for identifying unmet health needs, are developing in projects in Colorado, South Carolina, and American Samoa. Projects in Maryland and Utah are focused on health services for the juvenile youth offender in detention centers; in Connecticut and Florida projects have developed statewide approaches for support of all community efforts to meet the needs of pregnant teenagers; and in Virginia the emotional/psychosocial components of chronic illness and handicapping conditions on the adolescents are being addressed. In addition, health professionals are being trained in the provision of adolescent health care.

Community Health Centers. In FY 1982 and 1983 the BHCDA awarded special project funds to about 600 community health centers (CHCs) to enable them to expand their health promotion and disease prevention program efforts. These funds are now part of their base award. The special project funds were used to promote networking with other public and private agencies and providers to expand both the scope of services and the population reached. Statewide plans for comprehensive programs have emerged in Wisconsin, Minnesota and Arkansas as a result of the BHCDA project funding. At the local level, centers are engaged in a range of intervention programs and the promotion of healthy lifestyles. These programs are now being evaluated to measure their impact and to identify program models.

Services for the Elderly. To reemphasize the commitment that community and migrant health centers have for providing needed services to the elderly, BHCDA has outlined a program to review and modify activities that support the four target area-physical fitness, nutrition, accident prevention and injury control, and drug use and misuse-identified by the 1984 PHS/AoA Health Promotion Initiative for the Aging (see OASH Prevention Highlights). In addition, over $1 million in special purpose funds has been awarded to 43 community and migrant health centers in 26 States to enable them to further expand their health promotion and health education programs for older Americans.

Health Promotion/Disease Prevention Assessment Guide. As a companion to *Promoting Health/Preventing Disease: Objectivesfor the Nation,* BHCDA issued the second edition of a guide to help personnel at primary care centers evaluate their health promotion programs and initiate new activities in support of the 1990 national health objectives. Community and migrant health centers are in a unique position to assess, plan, and implement local activities to encourage healthy behaviors. The guide provides ideas about new approaches to health promotion as well as references to national and local resources.

Community Health Connection. The Community Health Connection is a BHCDA-sponsored technical assistance program of the National Association of Community Health Centers. One of its primary purposes is to disseminate prevention information to organizations outside the Federal Government to help support a prevention network. The Connection's National Advisory Committee, which is comprised of leaders of national organizations interested in community health and health promotion/disease prevention, has facilitated the establishment of cooperative agreements, cosponsorship of programs, and resources sharing on a local level between CHCs and private health organizations.

Division of Federal Employee Occupational Health. BHCDA's Division of Federal Employee Occupational Health (DFEOH) serves as a consultant to the Federal Government on the development, implementation, and evaluation of occupational health programs for Federal agencies. The DFEOH operates, on request and on a reimbursable basis, 160 health units for Federal employee clusters throughout the United States. Its mission is to maintain and improve the health of Federal workers to sustain and improve productivity. The program provides direct and consultative services covering worksite health protection, primary and secondary disease prevention, and health promotion. All health unit staff in cooperation with community organizations have conducted worksite health fairs and other health information and behavioral modification programs. BHCDA is piloting a health profiling program which will include a health risk appraisal, medical history, selected medical tests, and counseling. Finally, DFEOH offers preventive services'through the Employee Counseling Services, which it operates as an adjunct to its health units.

Special Prevention Activities. A BHCDA-wide Immunization Work Group was established in 1983 to review the immunization needs of the Bureau programs and to develop, in cooperation with the Centers for Disease Control, an overall immunization strategy for improving the immunization status of preschool children, migrants, and primary care staff. Infectious disease outbreak management and surveillance procedures are also

being addressed. A second major activity has been the development of an overall framework for prevention programs in Community Health Centers. The framework, based on five major life stages, allows individual centers to design comprehensive health services plans that fit the assessed needs of their prenatal, pediatric, adolescent, adult, and geriatric populations. The Bureau has also undertaken an employee health promotion program for its central office staff. The program, entitled BHCDA BEARS, is a light-hearted approach to the serious business of improving employee health by encouraging healthy lifestyle choices.

Bureau of Health Maintenance Organizations and Resources Development

The Bureau of Health Maintenance Organizations and Resources Development implements and administers Federal policy and programs pertaining to health maintenance organizations (HMOs), health facilities, and health planning. Its program efforts are organized around three major functions: (a) to direct and support a nationwide system of State and local health planning agencies, (b) to stimulate the development of HMOs, and (c) to provide financial analysis and technical assistance for modernization and replacement of needed health care facilities. Active programs of disease prevention and health promotion are a component of each of these areas.

Office of Health Planning

The Office of Health Planning (OHP), through a network of 57 State Health Planning and Development Agencies (SHPDAs) and 131 Health Systems Agencies (HSAs), is responsible for statewide and regional health planning and resource development. More than 25,000 volunteer representatives nationwide (consumers, providers, State legislators, business, and labor) work in a public forum to plan for moderating health care costs, providing greater access to health care, improving the availability of health care services, and addressing long-term care. In a recent review of State health plans, the OHP found that prevention activities were listed by 34 SHPDAs as one of their top priorities; health education was rated by 24 SHPDAs as a top priority; and environmental issues are being addressed by 11 SHPDAs. Further, many HSAs have health promotion, education, and disease prevention as a priority activity in their health systems plans and work programs. Examples of HSA and SHPDA activities are described here.

SHPDA Prevention Highlights

Alcohol Abuse Prevention. In New Jersey, the SHPDA helped identify issues that led to the passage of a new statute that established the Alcohol Education Rehabilitation and Enforcement Fund. For the first year of the fund, $2 million is to be used for the establishment of Intoxicated Driver Resource Centers and $20,000 for the establishment of a pilot program of portable roadside breath analyzers. The balance of the fund in the first year is to be used for rehabilitation (70 percent), enforcement (20 percent), and education (10 percent).

Child Restraints in Motor Vehicles. The Arkansas Statewide Health Coordinating Council Advisory Subcommittee on Maternal and Child Health helped to enact legislation, passed in 1983, requiring child restraint in motor vehicles. It is also active in seeking legislation that would reduce fatalities related to drunk driving.

Health Promotion in Kansas. The Kansas Statewide Health Coordinating Council has recommended that programs for the promotion of positive health behaviors be developed in the workplace, school, and the community. On the work front, Project PLUS (Program to Lower the Utilization of Services) reaches over 2,200 workers and 57 major business, labor, and health care worksites in Kansas. School systems in Lawrence, Topeka, and several rural areas implemented programs during 1980 that utilize new teaching methods to promote health education. On the community level, local "Health Fairs," which have reached over 22,000 people in 50 Kansas communities, are one way in which health services, particularly screening services, can reach the population.

HSA Prevention Highlights

High Blood Pressure Control. The North San Joaquin Valley HSA, located in California, coordinates a regional high blood pressure control program. The program has included (a) a series of classes on high blood pressure conducted in Spanish for clinic patients; (b) a high school health fair with topics geared toward the interests of teenagers (nutrition, substance abuse, driving safety, high blood pressure, etc.); (c) a workshop for local employers on hypertension control; and (d) various other workshops for consumers on hypertension held throughout the community.

Household Toxicants Disposal. The Golden Empire HSA, also in California, has been very successful in publicizing information on the potential dangers caused by unsafe disposal of household toxicants. Together with the Sacramento County Health Department, a pilot project was developed to educate the community on the potential dangers and to provide a safe disposal system for household products containing hazardous material.

Worksite Health Promotion. The New Mexico HSA initiated a major project last fall to expand health promotion among businesses with 50 or more employees. The Health and Industry Project was initiated to follow through on its statewide employee Health Care Survey completed in July 1983. Analysis of responses from 50 major businesses indicated that a considerable educational campaign is needed to increase awareness of the benefits of worksite health promotion services. To initiate these services in major worksites, the HSA is pres-

ently engaged in providing employers with information on model programs, cost/benefits, strategies for establishing a program, and resources needed to maintain it. In addition, the HSA will offer its services as a forum where employers and health care providers can discuss the issues, and it will also offer to help in establishing new health promotion services at select worksites.

Prevention of Teenage Drunk Driving. The Regional Health Planning Council in New Jersey sponsored Soberfest, a program designed for high school students to promote prevention of teenage driving while intoxicated. The program included participants from Alcoholics Anonymous, the New Jersey Pediatric Association, and local representatives. Parents and teenagers who have been in or affected by a drunk driving incident addressed the students and provided testimony of the tragic outcome of driving while intoxicated.

Office of Health Maintenance Organizations (OHMO)

The Office of Health Maintenance Organizations (OHMO) awards Federal qualification to HMOs meeting the requirements of the HMO Act, monitors ongoing compliance with these requirements, provides technical assistance to organizations seeking to develop HMOs and to existing HMOs, and promotes private sector investment and involvement in HMOs. OHMO expects HMOs to include health promotion and disease prevention activities in their comprehensive health benefits packages. Although a systematic mechanism is not in place for identifying such activities of HMOs, most HMOs disseminate periodic newsletters to their members devoted primarily to articles on healthy lifestyles and informing members of classes or courses designed to promote good health. Many HMOs offer or arrange for these courses on topics such as Cardiac Pulmonary Resuscitation, aerobics and other types of exercise, smoking cessation, weight control, and nutrition.

Office of Health Facilities

The Office of Health Facilities (OHF) supports and develops policies for Federal programs concerned with health care capital, including construction, modernization, utilization, and the planning of health facilities. The OHF is concerned with health promotion and disease prevention as it influences or alters the organizational, financial, structural, and physical aspects of health care institutions. It is involved in incorporating health promotion through facility design and construction, marketing special health promotion services to attract additional patient revenues, and coordinating with national organizations and associations to promote the achievement of mutual goals.

Bureau of Health Professions (BHPr)

The Bureau of Health Professions (BHPr) provides national leadership through coordination, evaluation, and support of the development and utilization of the Nation's health personnel, assesses the Nation's health personnel supply and requirements; and forecasts future personnel supply and requirements under a variety of health resources utilization strategies. BHPr collects and analyzes data and disseminates information on the characteristics and capacities of the Nation's health personnel production systems; develops, tests, and demonstrates new and improved approaches to the development and utilization of health personnel within various patterns of health care delivery and financing systems; and provides financial support to institutions and individuals for health professions education programs. It administers Federal programs for targeted health personnel development and utilization and provides leadership for assuring equity in access to health services and health careers for the disadvantaged. BHPr also serves as a focus for technical assistance activities in the international aspects of health personnel development, including the conduct of special international projects relevant to domestic health personnel problems.

BHPr Prevention Highlights

The Secretary's Award for Innovations in Health Promotion and Disease Prevention. Managed by BHPr, the second annual competition for the Secretary's Award for Innovations in Health Promotion and Disease Prevention was held in academic year 1983-84 in cooperation with the Federation of Associations of Schools of the Health Professions. Students in over 1,200 health professions schools were eligible to participate. The competition recognized the best proposals for innovative community projects that address the priority areas for the 1990 Objectives for the Nation. For awards announced July 20, 1984, the first prize was shared by four senior students from the Auburn University School of Nursing, Montgomery, Alabama, for a proposal to improve the teaching of asthmatic students. The second prize was shared by two second-year medical students at the University of New England College of Osteopathic Medicine, Riddleford, Maine, for their proposal to decrease the incidence of osteoperosis-related injuries. The third prize was awarded to a master's degree candidate in the School Health Education program at the University of Oregon, Eugene, Oregon, for a proposed lifestyle planning program to reduce health risks among university students. In addition, awards were presented to eleven semi-finalists. The third annual competition is now in progress.

1984 ***Workshops.*** Five workshops in 1984 assessed the current and future impact upon the education of health professionals of the national goals contained in ***Health Promotion/Disease Prevention: Objectives for the Nation.*** Workshops were convened for allied health, public health, primary care, and voluntary and proprietary health programs personnel. Proceedings and recommendations from each of these workshops, together with rationales and possible implementation strategies, were directed to health professions faculty, education program administrators, professional associations, and other concerned organizations. The Summary Workshop developed overall recommendations and strategies

based on the proceedings of the first four workshops. The results of this session were reported in January 1985 to the National Advisory Council on Health Professions Education and the National Advisory Council on Nurse Training and may serve as the basis for future policies concerning the education of health professionals to provide more effectively disease prevention, health protection, and health promotion services. A related project will study how health administrators in hospitals, health maintenance organizations, and long-term care and ambulatory care settings can be more effective in addressing health promotion and disease prevention initiatives.

Division of Medicine. In FY 1983, the Division of Medicine awarded over $1.5 million to support preventive medicine activities. An estimated 60,232 individuals received services from grant-supported residents in training. The largest total award was in the Preventive Medicine Residency Training program: Twenty grantees were awarded a total of $1 million to provide training for 74 residents in preventive medicine care. In the General Internal Medicine/General Pediatrics Residency Training program, 25 grantees included preventive medicine activities in their residency training programs. The Area Health Education Center (AHEC) program provided funds to seven projects for preventive medicine activities impacting almost 60,000 individuals. In FY 1983, four studies funded by the Division of Medicine were designed to determine the extent and depth to which residents are prepared to provide preventive health care in clinical practice. The Division of Medicine also announced the distribution in 1984 of ***A Family Medicine Curriculum Guide to Substance Abuse,*** published by the Society for Teachers of Family Medicine.

Division of Nursing. Approximately eight nursing research grants will focus on the roles of nurses in the prevention of illness and the promotion and restoration of health, and approximately 75 nurse practitioner training programs (of which 18 prepare nurse midwives) will be supported by the Bureau of Health Professions. BHPr also provides support for the development of a nursing center for the elderly. This program is designed to improve the quality of service for elderly patients by improving the training for nurses in this area. Approximately five continuing education grants will be awarded for projects to update the skills of registered nurses in various health promotion activities such as providing self-management training for groups who are at risk for depression, migraine headaches, or alcoholism. In addition, an educational program is being designed to increase the skills of registered nurses in environmental health.

Division of Associated and Dental Health Professions. In addition to sponsoring the education of health professionals workshops, BHPr also sponsors the training of allied health personnel and health professionals in geriatric care. Nine allied health training centers have received grants for faculty training and the development of new courses, materials, and training experiences to prepare allied health professionals for appropriate expanded roles in health promotion and disease prevention. Grants have been awarded for two medical schools which serve as geriatric education centers focusing on the training of health professions in the diagnosis and treatment of problems of the aged.

Indian Health Service

The Indian Health Service (IHS) assists Indian tribes to develop the capacity to staff and manage health programs for American Indians and Alaskan Natives through activities including health and management training, technical assistance, and human resource development. It also helps Indian tribes to coordinate health planning; obtain and utilize health resources available through Federal, State, and local programs; design and operate comprehensive health programs; and evaluate health care programs. The Indian Health Service provides comprehensive health care services, including hospital and ambulatory medical care and preventive and rehabilitative services, and it develops community sanitation facilities for American Indians and Alaskan Natives. The Service is the principal Federal advocate for Indians in the health field to assure comprehensive health services for American Indians and Alaskan Natives.

The goal of the Indian Health Service is to elevate the health status of American Indians and Alaskan Natives to the highest possible level. The IHS operates a comprehensive health services system that provides health care for over 900,000 American Indians and Alaskan Natives through a network of 48 hospitals, 98 health centers, and more than 300 health stations and locations. The IHS emphasizes prevention through research, dissemination of information, and delivery of preventive services. The most dramatic evidence of the impact of these efforts has been an increase in expected life span for Indians of both sexes. In the period from 1971 to 1981, the life expectancy at birth increased by 6.0 years. (Nationally, for all races the increase in the same time period was 2.9 years.) In addition to the prevention highlights presented here, the IHS is sponsoring a variety of other prevention programs, including accident and injury control, nutritional programs, nuclear resource hazard management, a central diabetes initiative, and prevention programs for the elderly.

Office of Alcoholism Programs. The Indian Health Care Improvement Act required the IHS to assume responsibility from the National Institute on Alcohol Abuse and Alcoholism for support of American Indian and Alaskan Natives Alcoholism Programs. Since FY 1978, when 139 programs were transferred, the activities in alcohol treatment and prevention have increased to include 230 separate programs.

Immunization Activities. In accordance with the overall departmental immunization initiative, the IHS established as an objective to fully immunize 90 percent of Indian children under 27 months of age against diphtheria, tetanus, pertussis, polio, measles, mumps,

and rubella. At the outset, in FY 1978, the immunization level for this population was 60.8 percent. The target goal of 90 percent was achieved in FY 1983.

Fluoride and Other Dental Prevention Activities. The IHS Dental and Environmental Health Program have actively pursued the goal of 100 percent fluoridation of Indian community water systems. Recent reports indicate that in FY 1983 a ***68*** percent increase in acceptable fluoride levels was noted over FY 1982 efforts. In addition, the number of inactive fluoridation systems decreased by 26 percent in the same time period. An increased emphasis on the use of sealants was initiated in FY 1984, with the result that through the second quarter of FY 1984, 5,800 individual teeth were treated with sealants compared to no provision of sealants in FY 1982.

Maternal and Child Health Activities. Activities in this area include the efforts of physicians, nurses, nutritionists, health educators, and tribal workers (e.g., community health representatives and WIC staff) a comprehensive approach to health promotion and disease prevention. The most recent, complete data reveal that in FY 1980, the overall infant mortality rate for American Indians and Alaskan Natives was 13.8 per 100,000 live births. This compared to a national average for all races of 12.6 deaths per 100,000 live births. The dramatic findings were in the area of neonatal deaths. The rate in FY 1980 for American Indians and Alaskan Natives was 7.6 deaths per 100,000 live births in the first 28 days of life. This compared to a national average (all races) of 8.5 deaths per 100,000 live births for the neonatal period.

National Institutes of Health (NIH)

The National Institutes of Health (NIH) administers a comprehensive research program to improve the health of the American people through acquisition of new knowledge of disease. A federation of organizations containing 11 Institutes of Health, each with its own medical focus, NIH includes other entities within its structure: the Division of Research Resources, the National Library of Medicine, the Clinical Center (a hospital research unit), the Fogarty International Center, and several administrative support divisions. In conjunction with the Secretary's Health Promotion Initiative, the Director of NIH has moved to enlarge the research programs at NIH related to disease prevention. For example, a trans-NIH Committee for Research Related to Disease Prevention and Health Promotion has been created to provide the primary linkage between the Office of the Director, NIH, and the 11 Institutes. The committee is also responsible for analyzing, coordinating, and identifying research opportunities in disease prevention and health promotion. NIH prevention activities are presented here by NIH component.

National Cancer Institute (NCI)

The National Cancer Institute (NCI) is the central coordinating agency for the national research effort against cancer. It funds and conducts scientific research and the training of scientists and makes cancer information available to scientists and to the general public. The NCI prevention initiative has three principal objectives: identifying cancer-causing substances and behavior; developing, testing, and promoting substances that interfere with the process of cancer formation; and intervening with the public through clinical trials, defined population research, and education and demonstration programs to prevent or minimize the public's exposure to such substances and risks.

NCI Prevention Highlights

Acquired Immunodeficiency Syndrome (AIDS). NCI scientists have from the start of the AIDS epidemic con-

ducted AIDS research. Using data from population-based cancer registries, monitoring groups at high risk for AIDS offers the promise for prospectively detecting the spectrum of AIDS-related cancer as it unfolds in future years. (See OASH Prevention Highlights, AIDS Public Information Plan, for a description of PHS-wide prevention activities concerning AIDS.)

Cancer Control. The overall goal of the cancer control effort is to reduce cancer mortality in the United States by 50 percent by the end of the century. NCI is working toward cancer control through basic and applied research, through education of health professionals and the public, and through cancer control surveillance to identify particular needs in cancer control and to monitor program progress. The cancer control program is developing a set of quantitative objectives to reduce cancer incidence and mortality, with particular emphasis on the prevention of cancer caused by smoking and diet and on more effective planning of applied treatment programs.

Cancer Prevention A wareness Program. The Cancer Prevention Awareness Program is an effort to increase public awareness of cancer prevention by challenging the American people to learn to control their own cancer risks. Objectives of the program are to improve public attitudes regarding cancer incidence, treatment, and prevention; to improve public awareness and knowledge of cancer risks and of individual actions that control some of those risks; and to encourage individuals to adopt healthy behaviors to reduce their cancer risks. The program theme, "Cancer Prevention: The News Is Getting Better All the Time," encourages optimism. Messages emphasize personal control, explaining that individuals can take steps every day to control their own cancer risks. The program is being implemented in two phases. Phase I relies primarily on mass media efforts to create awareness of prevention messages and to encourage people to learn about cancer prevention. Health professionals will be urged to discuss cancer prevention with their patients. In Phase II, program emphasis will shift from the general public toward populations at greater than average risks (e.g., smokers, Blacks). Organizations who serve these groups, especially at State and local levels, will be encouraged to conduct cancer prevention programs.

Epidemiologic Studies to Zdentify Etiologic Factors and Predisposing Host Factors. The NCI uses case-control and cohort epidemiologic studies to evaluate key hypotheses in cancer etiology. Based on leads provided by U.S. cancer atlases prepared by NCI staff, field studies have implicated shipyard work and asbestos exposure during World War II in the high rates of lung cancer in several areas along the Atlantic coast. In southern Louisiana, the high rate of lung cancer appears to be due at least in part to smoking hand-rolled cigarettes, which contain high tar levels. Other studies have identified an effect of passive smoking, and the use of smokeless tobacco has been found to account for elevated rates of oral cancer among women in southern rural areas. In a large case-control study of bladder cancer, an excess risk was found among certain occupational groups, including truck drivers.

Occupational studies are a time-tested means of identifying chemical and physical carcinogens, and the NCI pursues such studies to assess hazards suspected on the basis of experimental, chemical, and field observations. Nutritional studies are receiving increased emphasis as evidence accumulates that dietary factors contribute to a large fraction of human cancer. Several nutritional studies have examined differentials for cancer by geographic area and by migrant group, whose cancer risks may be altered by changing dietary habits. In case-control studies, a role for dietary fat was suggested for breast and colorectal cancers, a broad nutritional deficiency for esophageal cancer, and a deficiency of fruits and vegetables for oral cancer. Family and genetic studies have resulted in the delineation of familial cancer syndromes, and in several instances these studies have led to mechanisms of host susceptibility. The discovery of the dysplastic nevus syndrome has provided a marker of susceptibility to melanoma, permitting early detection and treatment of this potentially lethal cancer. Surveys of neurofibromatosis and other hereditary syndromes have helped to clarify the risks of various cancers and have explored the role of several genetic markers.

Biochemical Epidemiology. This multidisciplinary area combines epidemiologic and experimental approaches to evaluate the influence of oncogenic viruses, dietary and metabolic factors, host susceptibility, air and water pollutants, and a wide variety of other risk factors that are likely to escape detection until laboratory probes are integrated with epidemiologic investigations. Effective utilization of this approach will clarify carcinogenic risks associated with nutritional influences or specific environmental agents that can be detected in tissues or body fluids. Of special interest are techniques to detect and quantify particular carcinogens or their metabolites in vivo through chemical analyses, mutagenesis assays, or immunologic detection techniques.

Chemoprevention. Research in chemoprevention involves identifying and characterizing agents with preventive activity and determining whether several natural or synthetic agents, given alone or together, can lower cancer incidence. Candidate agents include vitamin A and its precursor beta-carotene, vitamins C and E, and the trace metal selenium. Other agents now being studied in the laboratory include phenolic antioxidants, protease inhibitors, prostaglandin synthesis inhibitors, and indoles.

Studies of Infectious Agents. Since the discovery of the first human retrovirus, HTLV-I, in 1979, new impetus has developed in support of an infectious etiology for some human cancers, and two additional members of this class of viruses have been isolated. NCI studies of HTLV-I have led to the recognition that this agent is strongly linked to a distinct form of human T-cell leukemia/lymphoma. This syndrome, adult T-cell leukemia, has been shown to cluster in the U.S. in southern-born Blacks and in emigrants to the U.S. from

known or suspected HTLV endemic areas. Relatives of persons with HTLV-I infection show a higher prevalence of antibodies to this agent than the general surrounding population. Available evidence suggests that this virus is not highly contagious but transmission probably occurs in a manner resembling that for hepatitis B (i.e., through close contact and blood product transfusion).

Nutrition and Cancer. General dietary patterns, nutritional status, specific foods and food groups, and food additives are all recognized as possible risk factors for cancer. Hypotheses about the role of diet in carcinogenesis that have resulted from animal studies, in vitro experiments, and epidemiologic observations need to be tested and quantified in human populations. Certain factors in the diet may initiate carcinogenesis, some may promote it, or some may reduce cancer risk. The mechanism of action may be direct, through interaction with DNA, or indirect through alteration of metabolic pathways or cell regulations, or through modification of the endocrine or immune systems. Further research on diet and cancer, in which both epidemiology and laboratory science cooperate, could yield insights into these mechanisms and the biology of carcinogenesis.

Smoking, Tobacco, and Cancer Program. The NCI's Smoking, Tobacco, and Cancer Program (STCP) serves as the focal point for NCI's research and health promotion activities related to tobacco use and cancer. The STCP's overall goal is to develop generalizable strategies for the prevention and cessation of tobacco use. In meeting this goal, and coordinating it with the NCI goal of a 50 percent reduction in cancer mortality by the year 2000, a wide range of activities are under way. The focal points of the program's activities are intervention research and target population initiatives. Smoking intervention strategies currently being investigated in a number of large-scale longitudinal trials include those using the media, self-help strategies, schools as loci for smoking prevention, and the use of physicians and dentists as intervention agents. Target population initiatives include prevention and cessation research aimed at such high-risk groups as women, youth, U.S. Black and Hispanic populations, users of smokeless tobacco, and heavy smokers. By 1990 the most successful of these prevention/cessation strategies is expected to be available for widespread dissemination.

National Heart, Lung, and Blood Institute (NHLBI)

The primary mission of the National Heart, Lung, and Blood Institute (NHLBI) is to prevent heart, lung, and blood diseases. Three major cardiovascular disease risk factors that can be modified or eliminated are elevated blood cholesterol, high blood pressure, and cigarette smoking.

NHLBI **Prevention Highlights**

Cholesterol. In January 1984, NHLBI reported the findings of a major clinical trial, the Coronary Primary Prevention Trial (CPPT). The study set out to ascertain whether a decrease in fatal and/or non-fatal heart attacks would accompany a decrease in elevated blood cholesterol levels in high-risk males. Over 3,800 participants were followed for 7 years. Those in the study group were given the drug cholestyramine and placed on a mild cholesterol-lowering diet. The findings indicated that 19 percent fewer heart attacks occurred in the study group. The findings also suggested that high-risk individuals may be able to cut their risk of heart attack in half by lowering their blood cholesterol levels by 25 percent. The clinical trial provided the first conclusive evidence in humans that lowering elevated blood cholestrol can reduce heart attacks and heart attack deaths. From the findings and further analyses and from consultation with a number of organizations concerned with coronary heart disease and/or cholesterol reduction, educational strategies will be developed to guide a new National Cholesterol Education Program modeled after NHLBI's activities in the area of high blood pressure.

Several publications to assist health professionals in nutrition counseling, including cholesterol lowering, have been or are being published by the NHLBI. *Heart to Heart: A Manual on Nutrition Counselling for the Reduction of Cardiovascular Risk Factors,* published in 1984, provides counselors with practical ideas to get people to change their food habits. The American Heart Association plans to distribute the manual through its affiliate chapters throughout the country. Two publications under development are *Building Nutrition Counselling Skills-Volume I, A Guidebook for Workshop Planning* and *Volume III, A Workshop Resource Manual.*

High Blood Pressure. The National High Blood Pressure Education Program, now in its second decade, continues to receive high priority. During 1984, the program's Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure issued a report that altered somewhat the recommended stepped care regimen for pharmacologic therapy and endorsed nonpharmacologic approaches as a first step effort, particularly in patients with mild high blood pressure. It also created a new category, "high normal," for individuals who have a diastolic blood pressure between 84 and 89 mm-Hg. The report advises physicians that these individuals may need added attention to maintain their blood pressures within normal or acceptable limits. The high blood pressure educational emphasis continues to be one of compliance for identified hypertensives, with particular focus being given male hypertensives whose control rate is much worse than that of their female counterparts. A new mass media effort for 1984 will reflect this emphasis. Much of the progress and strength of the program continues to be found in the breadth of participation in the national effort, includng the involvement of all levels of government; medical, voluntary, and civic groups; industry and labor; and many others.

Smoking. The two latest reports on smoking from the Surgeon General (See OASH Prevention Highlights), one focusing on the relation of smoking with cardiovascular disease and the other on chronic obstructive lung diseases (COLD), have provided impetus for the Institute's anti-smoking efforts. An NHLBI Smoking Education Program will focus on strengthening the role of the physician in smoking cessation and stimulating smoking cessation activities at the worksite. Two major smoking research initiatives have also begun in 1984. A new clinical trial will (a) compare the rates of pulmonary function decline in two populations of cigarette smokers identified as having mild pulmonary function abnormalities and (b) demonstrate whether removal of risks at a stage when mild dysfunction 'has already occurred will effectively modify the course of COLD. Another research project scheduled to begin in 1984 is aimed at reducing the level of passive smoking that affects infants. The immediate goal is to reduce their exposure to cigarette smoke. The second goal is to develop a community laboratory for testing other intervention strategies designed to prevent lung disease and its sequelae in children.

Prevention of Neonatal Respiratory Distress Syndrome (RDS). A follow-up study to an earlier NHLBI clinical trial using a drug as a means of preventing neonatal respiratory distress syndrome has shown no long-term undesirable effects to either mothers or infants as a result of the drug therapy. The original clinical trial showed that female babies born prematurely to mothers who had been given the drug dexamethasone had significantly less respiratory distress syndrome than a similar high-risk group of mothers who did not receive the drug. Neonatal RDS occurs in up to 60 percent of the premature infants and is responsible for 10,000 deaths a year. According to investigators, application of the results of the clinical trial could prevent 15,000 cases of RDS each year and save approximately $200 million in costs of neonatal intensive care.

Preventing Disease at the Worksite. The NHLBI supports the implementation by business and industry of health promotion and disease prevention activities for employees. For example, the NHLBI supported three demonstration projects in high blood pressure control in industry. The results showed that high blood pressure control programs are effective in controlling blood pressure among affected employees, that they assist in reducing absenteeism, and that they appear to be cost-effective. These results formed an important part of a government/industry-sponsored worksite conference, ***Health Promotion and Human Resources: A Hard Look at the Data,*** aimed at encouraging decision makers from Fortune 500 companies to adopt these measures to promote health and reduce costs. NHLBI has also added a Small Business Initiative to its present workplace activities and is presently gathering relevant data on small business health concerns, barriers to program implementation, model programs, and resources to assist in beginning and maintaining these programs. The first publication from this initiative will be a ***Primer for Small Business Health Promotion and Disease Prevention*** (for cardiovascular and pulmonary diseases).

Self-Management and Prevention of Pediatric Asthma. Among chronic childhood diseases, asthma is a major source of physical disability that can result in significant impairment of the child's physical capacity as well as a loss of self-esteem and disruption of interpersonal relationships with friends, siblings, and parents. In the United States, between two to three million children have asthma and are at risk of experiencing the debilitating physical and psychosocial impact of the disease. The NHLBI, with Columbia University in New York, New York; the National Asthma Center in Denver, Colorado; and the American Institute for Research in the Behaviorial Sciences in Palo Alto, California, funded three research studies to determine the efficacy of asthma self-management programs for pediatric patients and their families. The findings indicate that appropriate asthma self-management programs can improve a child's attitude toward self as well as prevent many attacks and reduce the number of related emergency room visits.

New Adaptations of Nutritional Education Project. A pilot study on nutrition called "Foods For Health," which was conducted jointly by NHLBI and Giant Foods, remains a source for continued educational efforts. The study showed that nutritional educational efforts at the "purchase site" can bring about increased awareness of nutrition and can even assist in initiating and/or maintaining beneficial dietary changes. The educational strategies, materials, and an evaluation report of that pilot project are now being selectively marketed by tne NHLBI in conjunction with the Food Marketing Institute.

New ***Division of Epidemiology and Clinical Application.*** A major organizational change at NHLBI should result in a more concentrated effort to stimulate prevention-related research and transfer activities. The Division of. Epidemiology and Clinical Application was formed to provide expertise and support in such areas as demonstration and education research, clinical trials, epidemiology, and biometry for all of the program interests of the Institute.

National Institute of Allergy and Infectious Diseases (NIAID)

The National Institute of Allergy and Infectious Diseases (NIAID) conducts and supports research contributing to a better understanding of the causes of allergic, immunologic, and infectious diseases and the processes involved in the transmission and development of the diseases. The ultimate goal is the development of better means for prevention, diagnosis, and treatment. In much of its prevention research, the Institute regularly collaborates with other Federal agencies, research organizations in other countries, and, on occasion, with industry.

NIAID **Prevention Highlights**

Live Recombinant Virus Vaccine. The administration of smallpox vaccine (live vaccinia virus) to entire popu-

lations has eradicated this disease from the world. Now NIAID scientists are using the vaccinia virus as a new approach to vaccine production and disease prevention. By adapting modern techniques of genetic engineering, NIAID scientists are constructing new kinds of recombinant live virus vaccines made by inserting bits of genetic material from other disease-causing agents into the vaccinia virus. Researchers have shown that vaccines can be produced for hepatitis B, influenza, and malaria, and animal studies have indicated their experimental effectiveness. The finding that the vaccinia virus can accommodate large amounts of foreign genetic material opens up the possibility that one recombinant live virus vaccine may be able to protect against several diseases at one time.

Live Influenza Vaccine. A new experimental vaccine containing live virus and administered nasally has been shown to be effective in protecting adults against influenza. The virus in the new vaccine is a hybrid virus that grows poorly in humans, producing an infection that is usually symptomless but sufficient to cause the body to make antibodies that will protect against virulent virus. The new vaccine also markedly reduces the amount of virus shed from the respiratory tract and may thereby be effective in preventing spread of the virus in the population. Studies are now under way to determine how long the new vaccine is protective and to determine its safety and effectiveness in people at high risk of serious complications if they get influenza.

Prevention of Recurrent Genital Herpes. Genital herpes is caused by herpes simplex viruses. The average individual with recurrent herpes experiences three to four episodes each year. Currently there is no cure for genital herpes, but two forms of acyclovir have been approved for treating herpes patients under certain circumstances. In two studies supported by the NIAID, daily doses of oral acyclovir effectively reduced the rate of recurrent genital herpes infections in otherwise healthy men and women. Both groups of investigators stress that while these studies are very promising, further investigations are necessary to evaluate the potential problems with drug resistance and long-term safety. A large-scale, multi-center study is now under way to provide more information about long-term use.

Prevention of Chickenpox. Varicella, a highly contagious viral disease of children is a very serious problem in immunosuppressed children such as leukemics. NIAID supported the testing of an attenuated vaccine developed in Japan in this high-risk population. The vaccine was well tolerated and protected about 95 percent of the patients; those patients who did catch chickenpox had mild cases. An American pharmaceutical company has more recently reported that a similar vaccine was safe and effective in preventing the disease in normal children, and therefore a vaccine for widespread use may be available in the near future.

Prevention of Allergic Reactions to Penicillin. Patient enrollment into a clinical trial of skin testing with major and minor penicillin derivatives in hospitalized adults has been completed, and the data are currently being analyzed. At issue is whether skin testing with major and minor determinants of penicillin can predict hypersensitivity reactions to administration of penicillin (or its analogs) in history-positive and in history-negative hospitalized adults. If skin testing has this predictive value, the study may further demonstrate whether a positive or negative history adds information in this respect, beyond that gleaned from skin tests. When fully analyzed, this study is expected to provide definitive evidence on the diagnostic value of such skin tests.

National Institute of Dental Research (NIDR)

Improving the oral health of the American people is the major goal of the National Institute of Dental Research (NIDR). Toward that end, the Institute supports, conducts, and coordinates research on oral diseases and disorders and on normal patterns of oral tissue growth, repair, and maintenance, through research grants, contracts, training, and intramural projects. The demonstrated success of the strong prevention-oriented research program in dental caries has encouraged the Institute to promote prevention-related research relevant to the entire range of oral hard- and soft-tissue diseases and conditions. Ongoing studies are aimed at identifying factors influencing the adoption and implementation of school-based fluoride mouth rinse or tablet programs; establishing how dental practitioners learn and adopt new disease-preventive techniques; and evaluating the effectiveness of several behavioral interventions to improve long-term adherence to preventive regimens.

NIDR **Prevention Highlights**

Dental Caries Prevention. The recent NIDR survey showed a 30 percent decline over the decade in prevalence of caries in school children ages 5 to 17, and an increase of between 30 and 45 percent in numbers of school children completely free of caries. These results are attributed largely to multiple uses of fluoride. At present, clinical trials of a fluoride-containing slow-release device for application in high risk patients have demonstrated the safety and efficacy of the device so that larger scale preventive trials can be planned. This device would extend caries-prevention efforts to individuals who are handicapped, immunocompromised, institutionalized, or otherwise at high risk of developing tooth decay. Ongoing clinical trials are designed to examine the effectiveness of fluoride mouthrinsing in adults. The primary interest lies in the determination of the role of fluoride in preventing caries of both the tooth crown and root, the root that may become vulnerable to decay in the course of gum recession associated with aging. Another clinical trial is focused on testing the efficacy of increased fluoride concentrations in dentifrices (from 1,000 parts per million to 2,500 ppm), as well as testing two different formulations of fluoride: a combination of sodium fluoride and sodium mono-

fluorophosphates (MFP) versus an MFP formulation alone.

The importance of dental sealants to complement the use of fluorides was highlighted in an NIH Consensus Development Conference held in December 1983. Sealants, plastic resins applied to the grooved surfaces of teeth, seal out decay in areas very prone to caries and least benefited by fluorides. The consensus panel unanimously concurred that sealants were a safe and effective caries-preventive method. Widespread media attention to these findings should help to increase adoption of this caries-preventive method by the public and by dental professionals. The panel also emphasized the importance of the combined use of fluorides and sealants in the total prevention of dental caries. Work continues on the development of an anticaries vaccine. Research is focused on isolating major antigens of cariogenic bacteria for use in a vaccine which, possibly combined with adjuvants, would be given orally to infants prior to tooth eruption.

Prevention of Periodontal Disease. The major cause of tooth loss in adults over 35 is assumed to be destructive diseases of the gums (periodontal diseases). Research has established that these diseases are bacterial infections that can be reversed, at least in the early stages. The NIDR is developing new diagnostic radiographic methods to enhance early diagnosis as well as increasing efforts toward developing safe and simpler means of prevention, such as antimicrobials. Research investigators are also exploring the basic mechanisms of bacterial adherence, co-aggregation, and colonization, with the aim of developing nondestructive mutant forms of bacteria or chemical means of destroying the ability of periodontal bacteria to colonize the oral cavity. To ascertain the true prevalence patterns of these diseases, as well as those of dental caries in adults, the NIDR will undertake a major epidemiological survey of U.S. working adults and senior citizens in the coming year. This survey may yield information that will identify individuals at risk to allow targeted prevention efforts.

Prevention of Congenital Craniofacial Anomalies. Basic research on embryogenesis, including work with animal models, continues to elucidate the genetic-environmental interactions that give rise to such craniofacial anomalies as cleft lip and cleft palate. NIDR-supported investigators have demonstrated the risk associated with the use of alcohol, certain epileptic drugs, and retinoic acid during pregnancy. The NIDR plans to increase efforts to educate the public-especially young adults-to the teratogenic potential of substances and, in particular, alert young women to the necessity of altering relevant lifestyle habits before becoming pregnant.

Herpes Simplex Infection Prevention. NIDR virologists have used recombinant DNA methods to isolate antigens from the Herpes Simplex Type 2 virus (the cause of cold sores) for incorporation into an anti-herpes vaccine. The use of this immunogenic material in a hybrid vaccine (combined with vaccinia virus) is currently under study in animal models.

Oral Cancer Prevention. Scientists have identified several important risk factors associated with the development of oral cancer: cigarette smoking, the use of smokeless tobacco, and the use of alcohol. The combined use of tobacco and alcohol appears to be synergistic. The high lethality of oral cancers has focused attention on methods of early detection and on predisposing factors. NIDR scientists have developed a toluidine dye mouth rinse to identify suspicious lesions for follow-up treatment. Investigators also are exploring the links between infection with such agents as the herpes and papilloma viruses and the Candida albicans fungus and the development of oral cancer. Nutritional factors, weakened immunity, and irritation of the oral cavity are also associated with increased risk of oral cancer.

Identifying Children at Risk for Diabetes. It has long been a goal to find markers that might aid in identifying children in a diabetic family who are at high risk of developing insulin-dependent diabetes mellitus. NIDR scientists recently have identified a triad of markers that can be detected in the blood of such children many months or even years before they actually exhibit diabetes.

National Institute of Neurological and Communicative Disorders and Stroke (NINCDS)

The National Institute of Neurological and Communicative Disorders and Strokes (NINCDS) conducts and funds prevention research to understand the normal functions of the nervous system and sensory organs and the altered mechanisms that lead to neurological and communicative disorders. The overall goal is to discover ways to intercept, as early as possible, the development of the underlying processes that engender pathology, in order to decrease the number of people afflicted with these diseases, which are predominantly very chronic, are hard to diagnose, and as yet have no known cure. Hence the priority focus of NINCDS research is on the prevention of onset or progression of disease.

NINCDS Prevention Highlights

Nuclear Magnetic Resonance. This unique investigational research technique offers a noninvasive tool and approach to early detection and diagnosis of brain tumors, stroke, multiple sclerosis, spinal cord injury, vertebral column disease, brain stem pathology, and cerebral blood flow impairment. Nuclear magnetic resonance has more clarity, sensitivity, and precision than other imaging modalities.

Stroke. NINCDS is studying with fresh vigor the nature of stroke and its causes. The development of screening procedures to identify persons at risk due to such factors as high blood pressure, heart disease, family history, age, obesity, diabetes, and sedentary life is an im-

portant component of this research program. Basic, clinical, and epidemiological studies investigate appropriate risk-relevant intervention measures to prevent either the transient ischemic attack (TIA) or the first regular stroke, in order to forestall brain injury.

Inborn Errors of Metabolism. The nervous system is implicated in over ***600*** genetic diseases. In several dozen inherited disorders, excessive substances appear which cause cell damage and can lead to severe mental retardation. Individuals with these diseases have been found to be missing certain enzymes needed for the normal disposal of these accumulating substances. NINCDS conducts research on genetic mechanisms and enzymatic studies in order to enable early detection of these disorders. Studies are also being conducted to identify carriers of these diseases, to target enzyme therapy to appropriate CNS receptors, and to correct genetic deficiency via genetic engineering methodologies. The results of such research programs should aid in the development and introduction of early intervention measures to correct the deficiency and to prevent, deter, or reduce pathological sequelae.

Disorders of Hearing. Hearing impairment is a problem that occurs at all ages; its diagnosis, treatment, and rehabilitation are expensive. NINCDS is presently conducting studies on the developing otocyst, the biochemistry of inner ear fluids, genetic counseling in familial hearing disorders, inner ear damage from noise, and the effects of ototoxicity. The intent is to understand the underlying anatomical, physiological, and biochemical aspects of hearing impairment so as to monitor and intercept the onset of pathology in this important function of human communication. In addition, recent studies have demonstrated the usefulness of microsurgical techniques in the treatment of selected cases of middle ear infection in order to preserve hearing or prevent/deter the occurrence of hearing loss.

Epilepsy. Studies on convulsive and related paroxysmal disorders, such as epilepsy, search for (a) causation (during prenatal and/or perinatal period) by head injury, infection, congenital malformation, tumors, or accidents and (b) understanding epileptogenesis through studies on neurotransmission in focal and generalized seizures. These basic studies on epipathogenesis would eventually lead to the development of appropriate antiepileptic interventions.

Alzheimer's Disease. Basic, clinical, and epidemiological studies on Alzheimer's disease are being carried out to determine etiology; explore genetic factors; assess risk factors; unravel the underlying mechanism of physiopathogenesis; and estimate incidence, prevalence, morbidity, and mortality in several U.S. population groups. The objective is early detection in order to intercept the disease's emergency or alleviate its symptomatology.

Measles. NINCDS collaborated in a clinical trial that lead to the successful development of a new method of immunization against measles especially useful in children below one year of age, that is, inhalation for 20 seconds through a mask of undiluted aerosolized measles vaccine.

Genital Herpes. Recently, NINCDS developed a tissue-culture test that detects in 24 hours the presence of active genital herpes infection in pregnant women. This screening test, highly sensitive and specific, enables the obstetrician to select the appropriate method of delivery in order to ensure that the newborn is not exposed to the high risk of contracting the infection.

Huntington's Disease. NINCDS conducted and sponsored an international research effort on Huntington's disease that lead to the discovery of a genetic marker on Chromosome 4. This discovery has the potential of pinning down the marker's exact location in the human genome, thereby enhancing the probability of developing an adequate strategy for effective early detection and for an appropriate preventive intervention utilizing genetic engineering techniques.

National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases (NIADDK)

The National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases (NIADDK) is responsible for a variety of research related to arthritis, musculoskeletal diseases, and diseases of the skin; diabetes; endocrine and metabolic disorders; diseases of the digestive tract; nutrition; and diseases of the kidney, urinary tract, and blood. At NIADDK, prevention research has as its objectives both protection of people from disease and prevention of the progression of disease to disability or early death.

NIADDK **Prevention Highlights**

Prevention of Post-Menopausal Osteoporosis and Its Sequelae-Fractures of the Vertebrae, Hip, and Wrist. In osteoporosis-the most common bone disease, affecting approximately 16 million people over age 50-there is an accentuation of loss of bone with age, predisposing older individuals to fractures of the hip, spine, and wrist, even under minor mechanical stress. Studies in progress are developing evidence that low-dose estrogen administration and maintenance of adequate calcium intake (I gram per day) from age 40 will significantly and appropriately suppress bone resorplion. The April 1984 NIH Consensus Development Conference, organized by NIADDK, focused significant professional and lay interest on this subject.

Prevention of the Emergence and Progression of Frank Type II (Formerly "Maturity-Onset ") Diabetes in individuals With an Inherited Tendency for This Disorder. Generally speaking, persons at risk of Frank Type II diabetes are obese individuals with a strong family history of Type II diabetes. In the United States about 5 million patients are known to have Type II diabetes, and epidemiologic data indicate the existence of another 5 million individuals with the as yet unrecognized dis-

ease. Emerging research evidence suggests that weight reduction, attainment of lean to optimal body weight, adherence to sound diets, and regular physical exercise will reduce the metabolic abnormalities and clinical symptoms in most patients with this type of diabetes. The NIADDK diabetes program supports a broad range of research to define the relation between body weight, exercise, and diabetes and to determine whether lifelong maintenance of normal body weight and physical fitness can prevent the development of non-insulin-dependent diabetes.

Prevention of the Appearance and Progression of the Clinical Complications of Type I (Formerly "Juvenile-Onset") Diabetes. This grave disease requires daily administration of insulin for maintenance of the life of the patient. Even though this treatment has extended the average life span and improved the quality of life of patients with Type I diabetes, it has not prevented the development of the chronic progressive degenerative changes in various tissues that lead to heart attacks, strokes, kidney failure, gangrene, blindness, and damage to the nervous system. New technologies now permit studies to assess whether "tight" metabolic control will prevent diabetic complications. As a result of these advances, the NIADDK has initiated a collaborative clinical trial on the relation between blood glucose control and the vascular complications of diabetes mellitus.

Prevention of Obesity. Obesity plays a significant role in the development of cardiovascular disease, especially hypertension; the emergence of latent Type II diabetes; osteoarthritis of the weight-bearing joints; gall bladder disease and gallstones; and the detrimental somatic and psychological aspects of morbid obesity. The Institute is cosponsoring with the National Heart, Lung, and Blood Institute a Consensus Development Conference to present the findings that implicate obesity in many serious health disorders and to bring the adverse health implications of obesity to the attention of practicing physicians and the general public.

Short Stature. Children with hypopituitary dwarfism do not produce enough growth hormone of their own, and to attain normal stature they must receive supplemental hormone by injection. NIADDK's provision and distribution of growth hormone and NIADDK-supported research on hypopituitary dwarfism have prevented dwarfism in many thousands of children with this inherited condition. Recent research has shown that treatment with human growth hormone can help children with normal-variant short stature (height below the third percentile with no apparent organic cause) to increase their growth rate. NIADDK has also supported the development of synthetic human growth hormone. Clinical trials of this new material, which has the advantage of being available in unlimited amounts, have confirmed that its effects and potency are identical to those of the natural hormone, both in children and adults. These recent developments have opened the door to successful future prevention of dwarfism and extreme short stature in many individuals.

Prevention of the Recurrence of Kidney Stones. Recent NIADDK-supported research has shown that painful kidney stone formation and its recurrence, if due to excessive absorption of dietary calcium, can be inhibited and prevented by sodium cellulose phosphate, which binds calcium in the intestine and prevents its absorption. Other studies have shown that the sequence of events leading to the formation and recurrence of magnesium ammonium phosphate ("struvite") stones can be prevented through the blocking action of acetohydroxamic acid. Based on these studies, the Food and Drug Administration has recently approved both drugs, which fall into the "orphan drug" category.

National Institute of Child Health and Human Development (NICHD)

Many health problems that afflict adults originate before birth or in childhood. Thus the early stages of life offer exceptional opportunities to prevent disease, disorders, and social and psychological handicaps that can affect people at any time in their lives. This concept underlies the mission of the National Institute of Child Health and Human Development (NICHD): to develop new knowledge on early opportunities to prevent disease and disability, and thereby to ensure for all children the opportunity for a healthful and productive adulthood. The Institute emphasizes primary prevention through studies on ways to intervene before the biological onset of disease or emergence of behavioral problems. In those areas where basic knowledge is insufficient to allow intervention before a problem occurs, the Institute emphasizes research on knowledge that can be applied at the earliest stages of a disease or disorder.

NICHD Prevention Highlights

Chorion Villus Sampling (CVS). Since the safety and accuracy of amniocentesis for the prenatal diagnosis of genetic disorders was demonstrated about 10 years ago, 30 to 40 percent of pregnant women over age 35 volunteer to have this diagnostic procedure. But because the procedure has some drawbacks, including the need to wait until the 14th week of pregnancy before the procedure can be done safely, NICHD is supporting research on chorion villus sampling, a diagnostic procedure which can be done as early as the 8th week of pregnancy.

Consensus Development Conference on Diagnostic Ultrasound Imaging in Pregnancy. The NICHD, with two other NIH components-the Office of Medical Applications of Research and the Division of Research Resources-and the Food and Drug Administration's National Center for Devices and Radiological Health, sponsored a national conference to assess the usefulness of ultrasound in detecting many fetal structural and functional abnormalities, as well as its risks. A panel of physicians, basic scientists, an epidemiologist, nurses, educators, sonographers, and public representatives de-

veloped a consensus statement, which has been distributed to the membership of professional organizations on obstetrics and pediatrics as well as to midwives and medical sonographers. A brochure addressing the questions presented at the conference has been prepared for general public distribution.

Prevention of Respiratory Distress Syndrome. The NICHD has supported the development of and is testing a new procedure for treating premature infants with respiratory distress syndrome (RDS). Investigators found that putting a lung lubricant taken from human amniotic fluid into tracheas of newborn infants with RDS significantly improved their breathing. This lubricant, known as surfactant, helps inflate the alveoli (air sacs) in a baby's lungs after birth and prevents the tiny sacs from collapsing and sticking together after each breath. Studies are continuing to assess the long-term safety of this still experimental treatment.

Vasectomy Research. The NICHD sponsored a collaborative study, "The Health Status of American Men," to find out whether vasectomy could cause any type of health problem in men. The project looked at a wide range of illnesses, including cardiovascular diseases, skin diseases, rheumatoid arthritis, diabetes, blood clotting disorders, gout, and cancers. Investigators in four research centers collaborated in the study involving more than 20,000 men who had undergone a vasectomy 1 to 41 years ago. The results showed that vasectomized men had fewer deaths from all causes except accidents and violence, which caused the same number of deaths in men with or without vasectomies.

Measuring Infant Perception. The NICHD sponsored a four-day conference on techniques to measure the sensory systems in infants. The techniques involved blinking or tightening of eyelids, startle reflex, eye movement, nonnutritive sucking, respiration, heart rate, skin resistance, and pupil size, as well as cortical and brain stem-evoked potentials (electrical activity). Researchers hope to assess more precisely what infants hear and see during their first year of life. Ultimately, such new methods should stimulate the development of screening procedures for early detection and treatment of visual and auditory deficits.

Immunizing Unborn Rabies. Researchers supported by the NICHD have shown for the first time that the tetanus vaccine given to women in the later months of pregnancy crosses the placenta and enters the fetal blood stream. After birth, the infants of these mothers were found to have protection against tetanus and to respond more rapidly to DPT (diphtheria, pertussis, tetanus) immunization. The tetanus protection in the child was found to last longer than one year. This discovery will benefit families in rural areas of the United States and in developing countries where newborn care is not available or vaccination programs may be difficult to carry out. The significance of this transplacental immunization may lead to future prenatal immunization against streptococcal infections and meningitis.

Other Prevention-Related Research. In addition to the NICHD highlights just mentioned, the Institute supports the study of genetic disorders and congenital anomalies commonly associated with mental retardation. ***Fragile X Syndrome,*** a type of X-linked mental retardation, is considered to be the most common cause of mental retardation in males. NICHD supports investigators studying optimal tissue culture conditions for detecting the abnormal X chromosome. Findings will provide a basis for reliable diagnosis of carriers and for prenatal diagnosis and genetic counseling relating to a potentially preventable form of mental retardation. *Congenital Hypothyroidism,* which is found in approximately one in 4,500 newborns, results in intellectual impairment and neurological dysfunction unless diagnosed and treated early in infancy. To enhance newborn screening programs, NICHD supports a project that seeks to establish a connection between improved intellectual development and early treatment of children with congenital hypothyroidism.

National Institute of General Medical Sciences (NIGMS)

The National Institute of General Medical Sciences (NIGMS) primarily supports research of a basic, undifferentiated nature, which includes several areas that can be classified as prevention research.

NIGMS Prevention Highlights

Genetics Programs. Research funded through the Genetics Programs focuses on basic genetic mechanisms, structures, and processes and includes studies of DNA replication, genetic recombination, RNA transcription, translation, mutagenesis, and repair; studies on the structure of genes and the regulation of their expression; studies on the structure and function of chromosomes and ribosomes and their components; and studies on the role of genes in cellular processes and in development, including the relation of genetics to human health and disease. Research into environmental teratogens and deformations in pregnancy in humans aids in distinguishing genetic from environmental factors in birth defect causation and makes diagnosis of genetic diseases and genetic counseling more accurate. Work in pharmacogenetics, ecogenetics, and various common diseases may aid in the identification of susceptible persons at higher risk of being damaged by various environmental agents. Understanding of the mechanisms of X chromosome inactivation might lead to possible means of switching on or off the X chromosome.

National Eye Institute (NEI)

The goal of the National Eye Institute (NEI) is to work toward the elimination of the major causes of blindness and visual disability. The Institute supports research on the functioning of the visual system, the pathology of visual disorders, and the sciences supporting vision research. It also sponsors research on the prevention and

treatment of visual disorders, fosters studies of the rehabilitation of the visually impaired, and encourages clinical application of research findings. Moreover, NEI aims to heighten public awareness of vision problems through information programs and cooperates in health campaigns and other projects sponsored by volunteer organizations with similar concerns.

NEI Prevention Highlights

Prevention of Hereditary and Developmental Degeneration of the Retina. Gyrate atrophy is the first of the genetically determined retinal degenerations for which a specific biochemical marker and enzyme defect have been determined. This finding raises hope that similar defects can be determined and corrected in other such inherited degenerative eye disorders. Significant progress has been made recently in understanding the molecular biology of this genetic disease, and the cloning of the cDNA for the OAT (ornithine aminotransferase) enzyme is close at hand. The NEI is supporting studies to understand better such inborn errors of metabolism.

Prevention of Proliferative Diabetic Retinopathy. Retinal and choroidal vascular diseases impair retinal function by damaging the blood vessels and obstructing blood flow in these tissues. One of the leading causes of blindness from retinal vascular disease is diabetes retinopathy. The NEI is sponsoring basic research on diabetes mellitus involving the breakdown of retinal blood vessels, abnormalities in blood flow, disruption of the blood-retinal barrier, and scar tissue formation. Various techniques are being developed to permit diagnosis of the subtle changes associated with early diabetic retinopathy, and new treatments involving laser and drug therapy are being assessed in controlled clinical trials. (See Prevention of Diabetic Cataract.)

Prevention of Retrolental Fibroplasia and Other Proliferative Retinopathies. Premature infants whose lives are maintained in a high oxygen environment can be blinded by retrolental fibroplasia (RLF) if oxygen is administered to them for extended periods in high doses. NEI-supported studies are aimed at determining the appropriate amount of oxygen to be administered to premature infants, understanding better the role of oxygen in RLF, developing better methods to monitor oxygen levels in the nursery, and finding means of altering blood vessel susceptibility to oxygen. Because vitamin E is thought to be an important part of the body's defense against oxidative damage, investigators are currently testing the hypothesis that this or other antioxidants may prevent the development of retinopathy.

Prevention of Uveitis and Other Ocular Inflammations Through Research on Immune Mechanisms. Inflammatory disorders of the retina and choroid comprise a large group of highly destructive diseases which are frequently blinding and in certain cases are also very painful. Characterized by the accumulation of inflammatory cells and fluid, these diseases often affect not only the retina and choroid but also the vitreous body and the front portion of the uvea (the ciliary body and iris). When the uvea is involved, secondary glaucoma and cataract related to the inflammation may result. The use of S-antigen-induced experimental autoimmune uveitis has provided researchers with a reproducible animal model for inflammatory ocular disease. The prevention and abrogation of this severe immune-mediated model by cyclosporine has led to the use of this drug in treating selected cases of human endogenous uveitis. Initial findings are highly promising, and expanded clinical trials are under way.

Prevention of the Toxic Effects of Drugs on the Eye. Although in drug development, toxic effects on the eye receive more attention today than they did in the past, ocular toxicity testing is still often inadequate. Toxic effects on the eye can be subtle or slow to develop and thus may only become evident long after a well-tested drug is put on the market. The NEI supports investigations of the effects of drugs on ocular tissues, particularly changes in lens protein, metabolism, and ion transport.

Prevention of Trachoma. Trachoma affects over 500 million people and causes blindness in approximately 2 million. Although chlamydial keratoconjunctivitis, one type of trachoma, rarely leads to visual impairment in the United States, adult infection frequently causes prolonged discomfort, temporary visual disability, loss of work, and high medical expense. Approximately 60 percent of women and 40 percent of men with chlamydial conjunctivitis have concurrent genital infection. In addition, approximately one-third of babies born to mothers with chlamydial infection of the genital tract develop chlamydial conjunctivitis. Newborns also are at risk to developing chlamydial pneumonia, which requires prolonged hospitalization and has caused deaths. NEI-sponsored studies related to the prevention of trachoma include investigations in the pathogenesis and ocular immunology of trachoma, chlamydial infection, conjunctivitis, and related ocular infections and inflammatory diseases. Although vaccination currently provides only partial or temporary protection from trachoma, it is a promising method of prevention for the future.

Prevention of Human Senile Cataract. No effective nonsurgical treatment is yet available for this widespread problem, nor is a means of preventing cataracts available. NEI is supporting research on cataract prevention at various levels, from molecular to human population studies. NEI-sponsored investigators are trying to understand the basic changes that occur in the ocular lens with age in order to develop a method to prevent or arrest senile cataract formation.

Prevention of Diabetic Cataract. In the lenses of diabetic laboratory animals, the enzyme aldose reductase induces the accumulation of sugar alcohol, causing a series of changes that results in the formation of cataracts. Nontoxic aldose reductase inhibitors, which are effective in blocking diabetic cataract formation in animals, have been developed. Such compounds are now being tested for their effect on lens swelling in humans with diabetes. Research has also provided strong evi-

dence of the possible link between aldose reductase and the development of other diabetes complications such as diabetic retinopathy and neuropathy. An investigational drug called sorbinil, which is an aldose reductase inhibitor, is being tested in insulin-dependent diabetics by NEI-supported investigators at 12 research centers across the United States. The aim of the study is to determine whether sorbinil can prevent the development of diabetic retinopathy-and thus protect vision-in diabetics who do not yet have signs of diabetes-related eye problems. Also, the study will detect whether sorbinil can protect against the painful nerve damage often associated with diabetes.

Prevention of Glaucoma. It has been estimated that 2 million Americans have glaucoma. Despite the magnitude of the problem, the fundamental details about the disease processes underlying glaucoma remain unknown. For this reason, the NEI is conducting clinical and laboratory studies to define genetic, racial, and environmental risk factors for the development of damage to the optic nerve in glaucoma and to determine the reasons for the varying susceptibilities of individual eyes to optic nerve damage. The NEI is also supporting research to understand better the structures of the eye involved in the regulation of aqueous humor inflow and outflow in the front part of the eye and intraocular pressure, the alteration of these processes in glaucoma, and the effects of a variety of drugs on the inflow and outflow of fluid from the eye. The clinical effects of newly developed adrenergic drugs and frequently used aqueous humor inflow inhibitors are being examined in detail. Other drugs that affect intraocular pressure are under study in both animals and man, including corticosteroids, prostaglandins, and marijuana components. Drug delivery using liposomes is under investigation in an experimental system. New noninvasive methods to measure aqueous humor dynamics may make it possible to correlate data from humans with those from animals and to observe the immediate physiologic effects of drugs in humans.

Prevention of Amblyopia and Strabismus. Over 4 percent of the U.S. population has visual impairment due to disorders of the central visual pathways. NEI-supported studies are under way to determine the critical period during which abnormal visual input will result in inadequate development of the visual pathways and the brain's visual center. Investigators are also trying to determine if such abnormalities are reversible with treatment.

Prevention and/or Control of Eye Diseases Related to Nutritional Deficiencies. Nutritional deficiencies have a major effect on ocular tissues. NEI-sponsored investigators are studying the effects of vitamin A deficiency on ocular infection and keratomalacia (a leading cause of blindness among children in developing nations), the inhibitory effect of copper on enzyme function in normal lens metabolism, and the role of glutathione in maintaining lens clarity.

Prevention of Macular Diseases and Their Consequences. Aging-related macular disease is a major cause of blindness in people age 65 and over. On the basis of the findings of the Macular Photocoagulation Study, an NEI grant-supported clinical trial, it can be estimated that with prompt treatment 13,000 Americans with neovascular aging-related maculopathy each year could be permanently or temporarily saved from going blind, and an additional 120,000 spared lesser degrees of visual impairment. The Macular Photocoagulation Study determined that laser photocoagulation is effective in preventing severe visual loss from the neovascular form of the disease, which accounts for 90 percent of blindness from aging-related maculopathy. As striking as this treatment breakthrough is, the results are limited to one specific type of macular disease, and are applicable only at a particular stage in the disease. Basic research on macular diseases is taking advantage of new opportunities for learning about the effects of aging, light, and oxidation on the metabolism and other basic functions of ocular cells and tissues and the mechanisms that control new blood vessel growth. Another major interest is the development of noninvasive methods for assessing macular function.

National Institute of Environmental Health Sciences (NIEHS)

The National Institute of Environmental Health Sciences (NIEHS) conducts, fosters, and coordinates (in its own laboratories and through contracts, grants, and support of Environmental Health Sciences Centers) research and research training on the human health effects of chemical, physical, and biological substances in the environment. NIEHS objectives are to (a) develop understanding of the mechanism of action of such substances, (b) provide the scientific basis for evaluating their extent and severity on a national scale, (c) establish the toxicity of chemical substances of significant public health concern, (d) define and develop methods for diagnosis and treatment of environmentally induced illness, and (e) collect and disseminate information in furtherance of the program.

Thus, NIEHS is a research organization whose goal is to provide knowledge about the impact of environmental factors on human health in order to protect the public health and prevent environmentally related diseases. Once this information is developed, NIEHS transmits it to regulatory agencies, other government agencies, the medical community, industry, and the general public for appropriate action. Accordingly, results of NIEHS research, testing, and methods development form the basis for prevention programs for environmentally induced diseases and for action by regulatory and other agencies.

NIEHS Prevention Highlights

Cancer Risk From Passive Smoking. Many adverse consequences have been linked to active smoking, but the possible consequences of passive or bystander exposure to cigarette smoke have only recently captured

attention. Epidemiologists at NIEHS have completed a study that suggests that persons married to smokers and persons whose parents smoked have an increased risk of developing cancer. The study was motivated in part by evidence from a previous study which suggested that transplacental exposure to cigarette smoke constituents may increase overall cancer risk in adult life. In particular, animal studies had shown that transplacental and neonatal exposure to many potential carcinogens, including some of the compounds present in tobacco smoke and cigarette smoke condensates, can cause cancer. Other studies have found measurable amounts of smoke byproducts in the urine, blood, and saliva of nonsmokers passively exposed to cigarette smoke. There are suggestions that mutagens can be measured in the urine of passive smokers, indicating that compounds which can produce changes in hereditary material are circulating throughout the body of the passive smoker. Moreover, sidestream smoke, which is inhaled by the passive smoker, actually is qualitatively richer in certain known carcinogens than is mainstream smoke.

In the NIEHS study, more than 500 cancer patients were interviewed, along with 500 healthy controls, the majority of whom were friends of the cases, and more than 700 mothers or siblings of the cancer patients and controls (whose responses were used to corroborate parental smoking histories provided by adult offspring). Cancer risk was found to be increased 60 percent among individuals married to smokers and 50 percent among individuals whose fathers smoked (the number of cases involving individuals whose mothers smoked was too small to reach conclusions on this issue). Each of these exposures contributed independently to cancer risk. The increased cancer risk was not limited to known smoking-related sites and was detected for both smokers and nonsmokers. While overall cancer risk was increased 50 percent for individuals who were exposed in only one time period (either as children with a smoking parent or as adults with a smoking spouse), risk was more than doubled for individuals with exposures in both time periods. These findings were not explained by differences between cases and controls in age, race, sex, education, or individual smoking habits.

Although these findings must be regarded as preliminary because of the small number of any particular cancer site and other methodologic limitations, they do suggest that passive exposure to cigarette smoke may increase overall cancer risk and that risk may increase with increasing numbers of exposures. The findings are supported by several recent reports of increased lung cancer risk among nonsmoking women married to smokers and of increased cervical cancer risk among women married to smokers. Studies designed to expand upon the NIEHS research include a longitudinal follow-up of persons who were married to smokers in the 1960s and a study of leukemia and lymphoma risk in relation to smoking by parents.

Bioavailability of Dioxin in Soil. "Dioxin" is the term used to describe a number of chemical substances that are produced as a byproduct of the manufacture of such chemicals as hexachlorophene and phenoxy acid herbicides. Of these chemical substances, 2,3,7,8-tetrachlorodibenzo-p-dioxin, or TCDD, is the most toxic of the dioxin group and is implicated as having severe acute and chronic effects on health.

Thirteen years ago, waste oil that eventually was found to have been polluted with TCDD was used to control dust in three horse arenas in Missouri. The consequences were severe. Over the next few days and weeks, hundreds of animals, including at least 65 horses, died. One 6-year-old child developed an inflamed and bleeding bladder after playing in the soil in the arena, and three other children and one adult complained of skin lesions after exposure to the stables. All the symptoms disappeared after exposure was halted and have not recurred. In 1983 additional dioxin contamination was discovered in Missouri. At the same time the horse arenas were sprayed, TCDD-contaminated waste oil had been sprayed along many of the roads in Times Beach, Missouri, to control dust. In addition, dirt from the horse arenas was used as fill dirt for residential construction in what has now become known as the Minker/Stout site.

In the early 1970s it had been believed that the half-life for degradation of dioxin in soil was less than a year. It is now known that in deeper, more protected soils, the half-life of dioxin may be greater than 10 years. At the Missouri sites, the Environmental Protection Agency (EPA) found dioxin in the soil. To learn whether dioxin could be absorbed by mammals after it had been in contact with soil for an extended period, NIEHS researchers examined samples of dioxin-contaminated and uncontaminated soils collected by EPA and conducted experiments with male guinea pigs and with female rats. They found that swallowing TCDD-contaminated soil produces the same changes in guinea pigs and rats as pure TCDD given by the oral route. From these findings, it appears clear that TCDD-contaminated soil, if ingested, presents a potential hazard to people. A critical public health concern is the possible hazard to children playing outdoors who may contact and swallow dioxin-contaminated dirt; people also ingest dirt from contaminated hands, from foods, and from other sources.

Carcinogenesis Studies on Benzene and 1,3-Butadiene. Two widely used chemicals have been newly identified as causing cancer in laboratory animals. During FY 1984 NIEHS's testing component (i.e., the NIEHS activities dedicated to the National Toxicology Program, NTP) reported on 13 chemicals studied for their potential to produce cancer in laboratory animals, with a high probability that these same chemicals could cause cancer in humans. Of those chemicals, 8 were found to be carcinogenic in some species of animals. Among them are 1,3-butadiene, a common industrial chemical in the rubber industry, and benzene, which ranks fifth among organic chemicals produced in the United States. Benzene and 1,3-butadiene were selected for testing because they are produced in large volumes and are known to have a high potential for human exposure, and because adequate animal data did not exist. Additionally, benzene has long been known as a chemical

that causes leukemia in humans; until now, it was not considered to be an unequivocal animal carcinogen. It should be noted that more than 50 percent of the chemicals studied by NIEHS/NTP during the past year have no known potential for adverse health effects. Under the conditions of the NTP study, in which benzene was administered by stomach tube, the chemical caused neoplasms or cancers in several organ and tissue sites in male and female rats and mice. Exposing male and female mice to concentrations of 1,3-butadiene in air led to the occurrence of early, rare, and multiple-site neoplasms.

All chemicals known to induce cancer in humans have been shown in adequately designed experiments to cause cancer in laboratory animals. The characteristics of chemical carcinogenesis appear to be identical in animals and in humans, even though a single chemical may produce different cancers in different species. By showing a carcinogenic response to a chemical prior to human clinical or epidemiological findings, studies using animals have identified seven such chemicals: aflatoxin, 4-aminobiphenyl, bis(chloromethyl)ether, diethylstilbestrol, melphalan, mustard gas, and vinyl chloride. The results from the benzene studies clearly support the carcinogenic effects seen in humans and should permit better prediction of human risk from benzene exposure. The findings from the 1,3-butadiene experiments signal a potential hazard for workers.

Asbestos in Drinking Water. Another important study reported by the NIEHS/NTP in FY 1984 was the investigation of the hazard of ingesting asbestos in drinking water and food. Short-length crysotile asbestos fibers, the type found in water from asbestos cement pipe, when fed to rats showed no evidence of carcinogenicity. In contrast, longer length crysotile fibers, similar to those found in insulation, caused benign intestinal polyps in a small percent of male rats. Two other types of asbestos, amosite and crocidolite, showed no evidence of carcinogenicity under similar exposure conditions. The importance of this finding is that while these types of asbestos are known cancer-causing materials when inhaled, the health hazard when ingested is unknown. These studies demonstrate that asbestos when ingested may pose a health hazard but that fiber type and length are important parameters in establishing the degree of the health hazard.

Estrogenic Activity of Chemicals. Another NIEHS laboratory conducts research on the mechanisms whereby various naturally occurring and synthetic chemicals show significant estrogenic activity in the human body and in laboratory animals. These chemicals as a group have widely divergent molecular structures. Understanding the chemical structural basis of estrogenic activity may help identify those occupational and environmental chemicals that have the potential for causing changes in the reproductive system. An example of such a chemical is chlordecone (Kepone), which has been found to cause impotence and sterility in male workers. Estrogenic contaminants also are suspected of being associated with premature sexual development in very young children in Puerto Rico.

National Institute on Aging (NIA)

The National Institute on Aging is responsible for the conduct and support of biomedical, social, and behavioral research and training related to the aging process and the diseases and other special problems and needs of the aged. Within this broad mandate, one of NIA's goals is to develop programs which constitute an overall strategy of research related to health promotion and disease prevention.

NIA Prevention Highlights

The Baltimore Longitudinal Study of Aging (BLSA). The BLSA was initiated in 1958 to permit repeated observations of subjects over a period of time in order to quantify true age changes and elucidate the mechanisms underlying these changes. The BLSA has produced substantially detailed information concerning the nature of normal aging processes. *Normal Human Aging: The Baltimore Longitudinal Study of Aging* summarizes the findings of the first 25 years of this study and is scheduled for publication in early 1985. These findings should contribute to the development of interventions to counter many age-related changes.

Geriatric Research. Urinary incontinence is a significant cause of disability and dependency among the elderly. At least 2 percent of community dwelling people over age 65 are afflicted with urinary incontinence severe enough to cause substantial limitation or alteration of daily activities. Studies of urinary incontenence in nursing homes have shown prevalences of from 30 to 50 percent. Preliminary evidence suggests that behavioral therapies, such as habit retraining, pelvic floor exercises, contingency management, and biofeedback approaches, may be especially promising in the treatment of urinary incontinence. Following up on a workshop on this topic in April 1983, the NIA, in collaboration with the Division of Nursing, Health Resources and Services Administration, plans to support clinical trials of behavioral therapies of urinary incontinence in the elderly. The research will focus on methodologic problems in design of aging studies, problems in recruitment, and problems in protocol implementation. It is anticipated that the research will provide the information needed to affect health care practice and services.

Accidents in the Elderly. Falls and related accidents in the elderly are responsible for over a quarter of a million deaths, 40,000 or more permanent placements in nursing homes, and approximately $1 billion per year in health care costs. The NIA plans to hold a workshop on this topic and to support research related to falls. In addition, staff of NIA are involved in a study of hip fractures, which are usually the result of falls. This research is expected to provide useful information in the planning of future strategies for the prevention of hip fractures.

Alzheimer's Disease. Alzheimer's disease is a dementing disorder that affects 5 to 6 percent of the over-65 population. Research suggests that Alzheimer's disease may be related to abnormalities in levels of the neurotransmitter acetylcholine. The drug physostigmine, which raises levels of acetylcholine, has been found to improve memory in patients with early stage Alzheimer's disease. Such findings may lead to the treatment and prevention of memory loss in affected individuals.

Hypertension. Hypertension is one of the more prevalent diseases of the elderly. It is estimated that over 40 percent of those over age 65 have this disorder and that 30,000 strokes will occur each year within the group, of which 10,000 will be fatal. Even partial reduction in this high incidence of strokes will represent an important health benefit. The NIA is collaborating with the National Heart, Lung, and Blood Institute in clinical trials on treatment of systolic hypertension in the elderly.

Teaching Nursing Home Award. The NIA initiated this award in FY 1982 as a mechanism to stimulate high quality biomedical and behavioral research on health problems, therapies, and health maintenance strategies. The program is directed at research on long-term care and medical problems of the elderly in institutions as well as in community settings. Specific research projects within these awards include the role of nutrition, exercise, and other factors in preventing diseases and functional disability.

Health and Behavior. The NIA actively seeks studies to specify the dynamic interrelationships of aging, health, and behavior. Several ongoing studies focus on how aging processes interact with health care attitudes and behaviors to influence health and functioning over the life course. Of particular significance are studies that examine antecedents and consequences of different types and levels of health care utilization and studies that follow selected individuals over time to identify psychological characteristics and health practices associated with the early occurrence of illness or mortality.

Epidemiological Research. Survey and epidemiological research has the potential for identifying risk factors associated with disease and disability and for leading interventions to deal with disabilities. NIA prospective studies are under way involving large populations of elderly persons in communities in Boston, New Haven, and Washington and Iowa Counties, Iowa, comparing baseline information on a wide range of variables. A total of 10,000 people over age 65 are being followed to determine patterns over time of health and disease; functional status; risk factors; behavioral, social, and environmental interplay; and health outcomes. An additional study is planned for implementation in a predominantly Black population. The NIA is the lead agency in a seven-Institute collaborative follow-up of the National Health and Nutrition Examination Survey. In addition to providing information on nutritional status and subsequent health, the study is examining the impact and outcomes of risk factors related to smoking and the use of alcohol, exercise, blood pressure, and weight.

Information Dissemination. The NIA sponsors several public information dissemination activities related to disease prevention. In one very successful project the NIA, in collaboration with Pfizer Laboratories, sponsored a traveling exhibit in shopping malls. This exhibit, part of a larger one sponsored by the American Association of Retired Persons, features free health information for older people, including a pamphlet called "Help Yourself to Good Health." The total program is expected to reach over 3 million consumers. Market research also is a significant component of the PHS/AoA Health Promotion Initiative for the Elderly (see OASH Prevention Highlights). In another effort to deliver health information to a wide audience, the NIA distributes Age Page pamphlets to supermarkets through the Supermarket Communication Systems Program. NIA also has recently established a network of Age Page distribution with the Appalachian Regional Hospitals, a nonprofit system of hospitals and primary care services in Kentucky, West Virginia, and western Virginia.

Division of Research Resources (DRR)

The Division of Research Resources (DRR) strengthens and enhances the research environments of institutions engaged in health-related investigations by developing and supporting a variety of essential resources. These are used by investigators to enhance their own effectiveness and that of their institutions in responding to and carrying out the mission of the National Institutes of Health. Current programs include animal resources, biomedical research support, biomedical research technology, and general clinical research centers.

Animal Resources Program Prevention Highlights

Atherosclerosis in the Diabetic. Investigators at the Oregon Regional Primate Center have found that atherosclerosis in ***Macaca nigra*** (Celebes macaque) is related to the increasing severity of diabetes, a naturally occurring disease of this species. Since lipoproteins are prime contributors to atherosclerosis, their alteration by the diabetic state and by the addition of cholesterol to the diet was studied. The very-low-density lipoprotein (VLDL) and intermediate-density lipoprotein (IDL) fractions increased significantly with increasing severity of the diabetic state. The increase in low-density lipoproteins (LDLs) remained essentially unchanged. The addition of cholesterol to the diet exaggerated lipoprotein differences between monkeys. In ***Macaca nigra,*** the vascular changes are attributable to the diabetes itself, since there is only minimal dietary aggravation. The alterations in VLDL and IDL may reflect the contributions of diabetes to vascular sclerosis rather than the diet-induced LDL particle common in humans.

Correction of Fetal Abnormalities. Urethral obstructions in the developing human embryo (in utero) may result in advanced congenital hydronephrosis. Infants born with this condition have severely damaged kidneys, hypoplastic lungs, and deformities of the musculoskeletal system and abdominal wall. These de-

velopmental consequences of fetal urethral obstruction may be prevented if the obstruction is relieved early enough to permit normal fetal development. Investigators at the California Regional Primate Research Center have studied the pathophysiology of fetal urethral obstruction and the feasibility of its correction in utero by stimulating the hydronephrosis condition in fetal lambs and nonhuman primates during the last trimester of pregnancy. Control of preterm labor is essential to the success of surgical correction of this condition.

Vaccines in Pregnant Female Monkeys and Their Offspring. Scientists at the Delta Regional Primate Research Center, Covington, Louisiana, are developing and characterizing nonhuman primate models for studies on the effects of vaccines in pregnant females and their offspring. The long-term goal of the project is to gather evidence for the safety and efficacy of maternal immunization during pregnancy for the protection of the newborn by placentally transferred antibody against frequent infant pathogens. Two primate species have been extensively studied: the squirrel monkey and the rhesus monkey. In rhesus monkeys, the antibody responses to pneumococcal polysaccharide were greater, lasted longer, and were more reproducible than in squirrel monkeys. In rhesus monkeys, there was also no demonstrable deleterious effect of maternal immunization on the subsequent ability of 5- or 6-month-old offspring to respond to pneumococcal polysaccharide. Pilot experiments on the responses of rhesus monkeys to newer protein-conjugated polysaccharide vaccines have been completed. This work will be extended to study the effect of protein-conjugated vaccines in pregnant rhesus monkeys and their offspring.

Biomedical Research Support Program Prevention Highlights

Agoraphobia. Studies are continuing on the prevention and treatment of agoraphobia, which means fear of the marketplace. Agoraphobia is estimated to affect between 2 and 10 million people in the United States, most of whom are undiagnosed and untreated. These patients experience panic attacks when they go to the supermarket or other public places, and they stay home rather than risk the recurrence of such episodes. Research investigators have found that these patients have hyperfunction of their peripheral norepinephrine and epinephrine system. As a result, patients overreact to stress with abnormally high levels of these catecholamines, which in turn cause their symptoms of palpitations, chest pain, dizziness, hyperventilation, weakness, and acute anxiety. Investigators have been successful in treating these patients with several antidepressants, including imipramine, which either decrease the release of catecholamines or block their effect. Once patients are diagnosed as agoraphobic, gain understanding of their illness, and realize that medication will prevent the panic attacks, over 80 percent of them get well.

Paralytic Shellfish *Poison.* The development of a new bioassay that uses the common housefly and that is simple, rapid, and inexpensive is helping to prevent paralytic shellfish poisoning (PSP). Paralytic shellfish poison refers to the toxin build-up in marine bivalve mollusks (clams, mussels, oysters, scallops) that will hospitalize or kill a human who eats the shellfish. Traditionally, the PSP has been a hazard only in the cold northern waters, but in the past decade the phenomena has steadily spread southward on both coasts of North America and to Europe. High levels have been reported as far south as Ventura, California. The new bioassay should improve the monitoring of PSP toxicity.

Biomedical Research Technology Program Prevention Highlights

Nutrition and Crohn's Disease. Investigators at the Biomedical Mass Spectrometry Resource, Washington University, St. Louis, have been using mass spectrometry in conjunction with stable isotope-labeled amino acids to study nutritional requirements in healthy and diseased patients. Skeletal muscle represents 70 percent of the lean body mass and is the major site of new protein deposition during growth. Scientists and physicians at Washington University have studied the effects of feeding and fasting on muscle protein synthesis; the protein turnover rates in patients with muscle-wasting diseases, such as muscular dystrophy; and amino acid metabolism is adolescent patients with Crohn's disease and growth failure.

General Clinical Research Centers Prevention Highlights

Kidney Stones. Scientists at the University of Texas Health Science Center, Dallas, have announced a new drug, potassium citrate-a component of citrus fruits-for the prevention of certain calcium-containing kidney stones. Potassium citrate has been found effective in reducing the rate of stone formation in patients with "hypocitraturia" (low urinary citrate level) or preventing it entirely. Stones formed by patients involved in the research were composed of calcium oxalate or calcium phosphate. Of the 78 patients, 74 stopped forming stones while on drug therapy and 96 percent had a reduced rate of stone formation. When treatment ended, the rate of stone formation jumped to an elevated level again. Investigators state that the treatment has virtually eliminated the need for surgery on new stones in these patients.

Meningitis. Several General Clinical Research Centers are involved in developing a vaccine against bacterium *Haemophilus influenzae*, the most frequent causative agent of meningitis in children. Preliminary trials have demonstrated that the vaccine is effective in producing antititers against *H. influenzae* without causing serious side effects.

Rhinovirus Infections. A treatment has been developed to prevent symptoms of common cold caused by rhinovirus infections. Leukocyte (alpha) interferon produced by recombinant DNA technology has been tested as prophylaxis in volunteers and found to be effective in reducing the frequency of illness and the severity of symptoms.

Osteoporosis. Clomiphene citrate, a mixed estrogen agonist antagonist, is being studied in a General Clinical Research Center to determine if it can prevent osteoporosis in postmenopausal women. Studies in rats have shown that this drug has a protective action on calcium balance. It is hoped that it will have the same effect in humans, without having the side effects of estrogens.

Other DHHS Agencies

Health Care Financing Administration (HCFA)

The Health Care Financing Administration is responsible for the Medicare program, Federal participation in the Medicaid program, and other health care quality assurance programs. HCFA promotes the timely delivery of appropriate, quality health care to its beneficiaries-approximately 47 million of the Nation's aged, disabled, and poor. The need to lower costs of health services, while maintaining or improving the quality of care, makes it imperative to strengthen prevention activities, education, and health promotion. The agency's Prevention Committee, under the direction of the Associate Administrator for Policy, works on current activities, contributes to Department efforts, and seeks opportunities to increase the emphasis on prevention and develop new approaches where possible.

HCFA Prevention Highlights

Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) Program. This comprehensive Medicaid program for children under the age of 21 actively stresses and promotes the maintenance of optimum health through education and periodic checkups. Medicaid agencies inform eligible individuals of the availability of services, develop and implement a health-screening program, and provide for appropriate diagnosis and treatment. HCFA also worked with State Medicaid agencies on immunization initiatives under EPSDT.

Home and Community-Based Services. States may now request a waiver of Medicaid rules to provide home and community-based services to elderly or disabled individuals who would otherwise require institutional care. In addition to case management, homemaker, home health aide services, personal care, adult day health, habilitative services, and respite care, States may provide other services approved as cost-effective, including preventive care.

Pneumococcal and Hepatitis B Vaccines. Since 1980, Medicare has paid for pneumococcal vaccine for elderly and disabled beneficiaries. The vaccine is effective for 5 years. In 1982, HCFA's Office of Beneficiary Services arranged for a flyer on the vaccine to be mailed with social security checks. In 1984, Medicare coverage was extended to include hepatitis B vaccine. It is intended for those with a substantially heightened risk of contracting the disease. Clinical studies indicate that the hepatitis B vaccine can be effective for up to 5 years, but its effectiveness varies with the individual's condition and exposure. The Office of Beneficiary Services plans to include information on pneumococcal and hepatitis B vaccines in upcoming revisions of two publications- ***Your Medicare Handbook*** and ***Recent Changes in Medicare.***

Diagnostic, Screening, and Preventive Services. At their option, States may receive Federal Medicaid reimbursement for various diagnostic, screening, and preventive services. As of October 1, 1983, 23 States covered diagnostic services, 17 covered screening, and 20 covered preventive services under this option. Both Medicare and Medicaid reimburse services to beneficiaries furnished through HMOs and similar comprehensive care organizations. This allows program recipients to benefit from the strong emphasis placed on preventive services by HMO-type organizations.

Second Opinion Program. HCFA's National Second Surgical Opinion Programs aim to improve the quality of health care by encouraging consumers to inform themselves fully about alternatives to surgery and the risks and benefits of treatment alternatives before deciding whether to undergo elective surgery. HCFA has established both a national network of referral centers that provide physicians' names to persons seeking second opinions and a national telephone hotline. Approximately 1,000 people use the hotline number each month.

Health Education and Preventive Care. Medicaid and Medicare cover patient education when it is an integral part of a diagnosis or physician-ordered treatment for injury or illness. In addition, HCFA has funded various demonstrations to test the cost and effect of health education or certain preventive services not ordinarily cov-

ered by the programs. In one, "cooperative care," HCFA is funding an evaluation by Johns Hopkins of an educational program administered to clinically ill Medicare patients at New York University Hospital and their care partners in self-care techniques. Another ongoing project which as been underway for 5 years and is nearing completion is the Municipal Health Services Program (MHSP). Administered in five cities in conjunction with the Robert Wood Johnson Foundation, the MHSP involves Medicare and Medicaid waivers granted to allow for a variety of preventive services reimbursed on a cost basis, for example, pharmocological, dental, lab, and radiology services and the services of physician extenders. The project's goal is to deliver comprehensive primary care to poor and elderly inner city residents in order to reduce expensive emergency room or fragmented care. HCFA is also funding a substudy of the Rand Health Insurance Study, which tests the quality and effectiveness of preventive medical care involving the use of various health insurance plans. HCFA will be funding demonstrations to test the effects of Medicare reimbursement for clinical and health education/promotion services. Specific services suggested by study groups for experimental coverage include a package of clinical services (history and physical, height, weight, influenza immunization, high blood pressure screening, test of stool for occult blood, vision, hearing, hematocrit, breast exam, pap smear) and a package of health education/promotion services (risk reduction, medication awareness, smoking cessation, exercise, nutrition, mental health). HCFA's objective in these demonstrations is to offer an expanded benefit package of preventive services to a select group of Medicare beneficiaries and to assess the impact of these services upon subsequent utilization and costs of medical services and measures of health services.

Office of Human Development Services (OHDS)

The Office of Human Development Services (OHDS) sponsors social services and human development programs responding to specific groups with recognized needs. About 80 percent of OHDS funds are dispersed as grants-in-aid to States that operate their own programs, such as those for low-income individuals, families, persons with developmental disabilities, runaway youths, the elderly, and Native Americans.

OHDS Prevention Highlights

Social Services Block Grant Funded Programs. The major source of Federal funding for social services programs in the States is the Title XX Social Services Block Grant (SSBG). Among the goals of the SSBG program are the preventing or remedying of neglect, abuse, or exploitation of children and adults unable to protect their own interest as well as the preventing or reducing of inappropriate institutional care. In FY 1984, reports indicate that 47 States and jurisdictions are using SSBG funds to provide protective and emergency services to children, while 45 States and jurisdictions are providing the same type of services to adults. Home-based services (homemaker, home health, and chore services), which help to prevent institutional care, are being provided in 51 States and jurisdictions. In general, States are continuing to use SSBG funds for those social services that will assist individuals in achieving or maintaining self-sufficiency.

Child Health and Immunization Initiatives. The goal of the Head Start Bureau of OHDS's Administration for Children, Youth, and Families is to bring about a greater degree of social competence in children of low-income families. Head Start health services emphasize prevention, early identification, treatment, and rehabilitative aspects of childhood illness. They also emphasize the involvement of the family in an ongoing health care system that will continue after the children leave the Head Start program. During Program Year 1983-1984, 87 percent of the children enrolled in Head Start programs completed medical screening examina-

tions, including all of the appropriate screening tests; 97 percent of those children identified as needing dental care received appropriate treatment. Ninety-four percent of the children had completed all of the required immunizations. In order to provide the children with nutritious meals, all Head Start programs participated in the U.S. Department of Agriculture Child Care Food Program.

Beginning in FY 1982, Head Start has funded three discretionary grants designed to foster strong linkages between Head Start grantees and community-based health and child care service programs. The three discretionary projects developed coordination strategies between Head Start programs and three levels of government. A national linkage strategy was developed and implemented between Head Start programs and county governments; a tri-regional strategy was developed which involved child health and child development programs in Regions I, II, and 111; and a statewide strategy was developed and implemented in the State of Tennessee. All projects had a prevention focus which stressed the importance of coordination and local linkages in the the provision of comprehensive services to children. The final reports, guidebooks, and manuals outlining specific linkage strategies are available in limited quantities through the Head Start Bureau.

Child Abuse and Neglect Programs. OHDS is funding a project to use results of the three-year NCCAN (National Center on Child Abuse and Neglect)-funded National Committee for the Prevention of Child Abuse (NCPCA) Collaborative Research of Community and Minority Group Action to Prevent Child Abuse and Neglect. The project will develop model programs in the areas of parenting education for Hispanic families; public education through use of street theater; and perinatal support and education for at-risk parents. The project will then evaluate the model programs and widely disseminate the results. In FY 1984, NCCAN is funding a set of school-based prevention projects. These projects will demonstrate methods to enhance student and family support to prevent child abuse and neglect through the use of school and agency coordinating teams, support for minority adolescents, parent and school partnerships, improvement of local education agency responses, and development of a school-based training and reporting network for child sexual abuse.

PHS/AoA Health Promotion Initiative for the Aging. The OHD's Administration on Aging launched with the Public Health Service a joint national initiative to develop and expand health promotion programs for the elderly (see OASH Prevention Highlights). A key objective of the initiative is to facilitate the collaboration between State and local health departments and State and Area Agencies on Aging, as well as voluntary organizations, in the development of health promotion programs at the local level for older persons.

Long Term Care Gerontology Centers. The planning and development of Long Term Care Gerontology Centers is authorized under Title IV of the Older Americans Act. Eleven centers in universities across the country are currently operational. Prevention activities conducted by these centers include interdisciplinary education and training of physicians, nurses, and other allied health professionals; the development of services models along a continuum of care; research; technical assistance; and the dissemination of information. Long Term Care Gerontology Centers provide opportunities for the interdisciplinary study of the prevention and treatment of chronic disease and the development of innovative approaches to the delivery of health care services. The Long Term Care Gerontology Centers also serve as resources to the National Network on Aging in planning, developing, and implementing community-based long-term care services.

Protective Services. The Administration on Aging of OHDS funds State Agencies on Aging to develop plans for the provision of protective services for the older population. A primary purpose of these services is to prevent abuse and neglect of older persons and to prevent or impede the development of functional incapacities.

Food Programs for the Elderly. The Nutrition Services Program for Older Americans, authorized by Title III(c) of the Older Americans Act, provides low-cost, nutritionally sound meats and other nutrition services to older persons, particularly those with the greatest economic or social needs. Support is authorized for both congregate and home-delivered meat services. In FY ***1983,*** meals were served at approximately 13,993 community sites. Sixty-one percent of the persons served were low-income. The average number of meals served daily in FY 1983 was 779,113.

Long Term Care Ombudsman Program. The Long Term Care Ombudsman Program investigates and works to resolve complaints made by or on behalf of residents of nursing homes and board and care homes. Ombudsman programs use their data on individual complaints to identify major problems affecting large numbers of institutionalized older people and to advocate for changes in laws, regulations, and policies which will prevent the recurrence of these problems. Ombudsman Programs are operating in every State and in over 500 communities throughout the country.

University Affiliated Facility Program. The administration and operation of the University Affiliated Facility Program is authorized under the Developmental Disabilities Assistance and Bill of Rights Act. Through grants awarded to 36 universities and five satellite centers, prevention activities are developed and implemented. These include the interdisciplinary training of personnet, the demonstration of the provision of exemplary services relating to persons with developmental disabilities, and the dissemination of findings relating to the provision of services to persons with developmental disabilities. Specific prevention activities include early intervention services, counseling and training of parents, and early identification, diagnosis, and evaluation of developmental disabilities.

Other Federal Agencies

Department of Agriculture (USDA)

Prevention programs administered by the USDA include food and nutrition programs for infants, children, pregnant women, mothers, the elderly, and low-income persons. Perhaps most notable is the Special Supplemental Food Program for Women, Infants, and Children (WIC); other programs focus on nutrition education, nutrition research, food quality and safety, pollution control and abatement, and environmental protection. Nine agencies within USDA administer these prevention programs.

USDA Prevention Highlights

Food Assistance Programs. The USDA's Food and Nutrition Service administers a variety of food assistance programs with State governments and local agencies. For instance, the Food Stamp Program helps needy households purchase the foods they need for good health, and through the Food Distribution Program the USDA distributes, primarily to schools, surplus foods. Other USDA food assistance programs include the Child Care Food Program, which helps child care facilities and institutions serve nutritious meals to preschool and school-age children; the Summer Food Service Program, which helps communities serve meals to needy children when school is not in session; the Special Supplemental Food Program (WIC), which provides nutritious food supplements to pregnant, breastfeeding, and postpartum women as well as to infants and children up to their fifth birthday; and the Special Milk Program for Children, which makes it possible for children attending a participating school or institution to purchase milk at a reduced price or free.

National Evaluation of School Nutrition Programs. Results of the National Evaluation of School Nutrition Programs were released by USDA in April 1983. The evaluation, which examined both the National School Lunch and School Breakfast Programs, is the first nationally representative public health and nutrition survey of the school nutrition programs. Among other things, the study found that students who participate in the school lunch program have higher intakes of energy and eight important nutrients than students not in the program. Four of the nutrients for which lunch program participants show superior intakes are ones that typically are deficient in the diet of the school-age population. The lunch program is superior not only when participants' nutrient intake from the noon meal is compared to that of nonparticipants, but also when participants 24-hour nutrient intake is compared to that of nonparticipants. Almost 90,000 schools offer the National School Lunch Program, and some 23 million children take part every school day.

Make Your Food Dollars Count. USDA launched a major nutrition awareness campaign for low-income consumers in August 1984. Called "Make Your Food Dollars Count," the campaign is designed to help low-income families, particularly food stamp users, buy and prepare more nutritious and less expensive foods. Pamphlets, posters, radio public service announcements, workshops, and a slide/cassette tape presentation are being used to get the nutrition message directly to food stamp participants and other low-income consumers.

Temporary Emergency Food Assistance Program. Announced by President Reagan in December 1981, the Temporary Emergency Food Assistance Program (TEFAP) provides surplus USDA commodities to needy individuals through nonprofit organizations and food banks. The foods are distributed free to participants who meet certain income eligibility criteria. A temporary program, TEFAP is authorized by Title II of Public Law 98-8, as amended, through September 1985. As of November 1, 1984, USDA had through TEFAB provided more than 1.6 billion pounds of commodities valued at over $2.1 billion to needy persons, including the unemployed.

"Healthy Mothers, Healthy Babies" Public Information Program. The USDA has been actively involved, along with the Department of Health and Human Services and some 60 professional, voluntary, and governmental organizations, in the Healthy Mothers, Healthy Babies public information program (see OASH Prevention Highlights). Among other activities of the program, USDA has worked to develop resource packages on reaching pregnant teenagers and encouraging breastfeeding.

Department of Education (DOE)

The Department of Education's activities associated with programs for health education have been consolidated under Chapter 2 of the Education Consolidation and Improvement Act of 1981 into a program of block grants to States and their local educational agencies. Under this arrangement, State and local educational agencies have the flexibility to initiate and support services for health education.

DOE Prevention Highlights

Inventory of Federal Activity in School Health Promotion. In response to the need for effective planning and implementation of health promotion programs through schools at all levels, in 1983 the Department of Education and the Department of Health and Human Services jointly sponsored a review of Federal activity in school health promotion. This inventory of activities helps to identify opportunities for cooperative planning of school health promotion programs.

National Diffusion Network. Through its Division of National Dissemination Programs, the Department of Education supports the National Diffusion Network

(NDN), a system whereby successful solutions to problems encountered by schools are identified and brought to the attention of other schools that are facing similar kinds of problems and may be able to adopt the programs. NDN developer demonstrator grants fund training and, in some cases, supply curriculum materials to schools that adopt the NDN programs. A number of the NDN programs are health related. For example, Project CHOICE in Seattle, Washington, is a cancer prevention and risk reduction curriculum for students from kindergarten through Grade 12. Have a Healthy Heart, an NDN program in Bellevue, Washington, is a heart health curriculum and aerobic fitness program for teachers and their students in Grades 4, 5, and 6. The San Jose, California, Nutrition Education Project is an NDN program that trains teachers to teach kindergarten through Grade 4 children the science of nutrition and to improve their food consumption patterns.

Department of Housing and Urban Development (HUD)

Prevention-related activities of the Department of Housing and Urban Development include contributions to health promotion goals and programs through Community Block Development Grants and other funding for the acquisition, construction, and rehabilitation of public facilities, including health care and medical centers; regulatory provisions for safety in manufactured and residential housing through construction standards and building codes; and efforts to improve the quality of life and prevention of illness in public housing through programs designed to meet the specific needs of lower income persons.

Department of the Interior (DOI)

As the Federal agency with responsibility for national parks and recreation, the Department of the Interior has substantial potential to enhance prevention activities. The National Park Service (NPS) has participated in many programs to promote physical well-being and health. In addition to the administration of the National Park System, NPS administers both outdoor recreation and historic preservation programs, formerly administered by the Heritage Conservation and Recreation Service. In 1981, these functions were merged with NPS. NPS serves as a catalyst in marshalling public and private interests to make outdoor recreation resources available for public use and enjoyment for future generations. Through the $1 billion, five-year Park Restoration and Improvement Program (PRIP), excellent progress has been made in bringing basic facilities such as roads, buildings, water and sewer systems, and numerous health and safety components to an acceptable standard. A major emphasis of the program is the accessibility of the handicapped to the facilities.

DO1 Prevention Highlights

Urban Recreation/Health Promotion. NPS provides grants to local governments to help physically and economically distressed urban areas improve recreation opportunities for the 70 percent of the population who live in urban areas. Activities may include rehabilitating existing indoor and outdoor recreation facilities; demonstrating innovative ways to enhance park and recreation opportunities at the neighborhood level; and developing local restoration programs that identify community needs, objectives, action priorities, and strategies for revitalizing the total public and private recreation system. NPS has worked with DHHS on ways to encourage health promotion activities through recreation programs and facilities.

Department of Labor (DOL)

Within the Department of Labor (DOL) are two principal agencies responsible for assuring safety and health in the workplace: the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA). Created by the Occupational Safety and Health Act of 1970, OSHA seeks to prevent occupational injury and illness through a variety of programs that emphasize cooperation with labor and management. The agency sets safety and health standards; enforces those standards through workplace inspections; and encourages voluntary compliance with standards through free consultation for employers, training and education grants to labor and management groups, and recognition of companies with outstanding safety and health programs. OSHA also works closely with states that run their own safety and health program and with Federal agencies to assure protection of Federal employees. Protection of miners from workplace hazards has been a concern of the Federal Government since 1910. MSHA was established under the Federal Mine Safety and Health Act of 1977 and inherited many responsibilities that previously belonged to agencies of the lnterior Department. The Nation has approximately one-half million miners, and MSHA works with the mining community to promote worker safety and health at more than 5,000 coal mining operations and over 13,000 metal and nonmetal mining operations. To carry out MSHA's mission, the agency uses enforcement, education and training, and technical and engineering assistance. It also sponsors a State Grants Program: With 42 States participating in the program, approximately $2 million in grants is awarded to State and local organizations to fund safety training programs aimed specifically at employees and operators of small mines.

OSHA Prevention Highlights

Hazard Communication. OSHA's new hazard communication standard requires chemical manufacturers and

importers to evaluate their products and, if the products are hazardous, to label containers with a hazard warning and to provide detailed information to other manufacturers who buy these products. Manufacturers in turn provide this information upon request to workers and train employees to handle hazardous products safely. By having information on the hazardous chemicals they work with, workers can more effectively monitor their own health. Further, the training they receive will enable them to prevent injury or illness by taking the necessary steps to protect themselves. This standard complements OSHA's requirement that workers exposed to toxic substances receive access to any individual medical records and exposure-monitoring data maintained by their employers.

Other Standards. OSHA has promulgated a more stringent standard to limit worker exposure to the sterilant ethylene oxide and has implemented requirements for employers to protect workers' hearing through periodic noise monitoring, audiometric testing, and the use of hearing protectors. The agency has also issued a final standard to protect workers at marine terminals. In addition, OSHA has developed proposed standards covering sanitation facilities for agricultural field workers, the fumigant ethylene dibromide, a lower exposure limit for asbestos, grain handling facilities, oil and gas well drilling, underground construction, cranes and derricks, and accident prevention tags.

Voluntary Protection Programs. To encourage voluntary efforts to maintain safe and healthful working conditions, OSHA has developed three voluntary protection programs to recognize companies that have exemplary safety and health programs. Participating companies are exempt from routine OSHA inspections. The ***Star*** program is for companies in high-hazard industries with comprehensive, successful safety and/or health programs. ***Try*** may be a stepping stone to ***Star*** or a means of testing alternative safety and health strategies. The third program, ***Praise,*** is open to firms with good safety records in low-hazard industries.

MSHA **Prevention Highlights**

Coal Mine Ventilation Awareness Program. MSHA is taking a "back-to-basics" approach to mine ventilation. A course is available for coal mine supervisors that covers eight ventilation-related topics and many practical visual aids including a Miner's Ventilation Checklist, which lists ventilation items observable by coal miners. The goal of the program is to reduce the chances of the most dangerous of all accidents-the methane explosion.

Supervisory Training Program. From 1978 through 1982, supervisors and foremen accounted for 15 percent of all coal mining fatalities. A training module was created to define the high protection of supervisory fatality rates in coal mining, prepare supervisors for their responsibilities relative to the health and safety of miners, and teach supervisory personnel to recognize and correct hazardous conditions.

Fatal Illustration Program. This program provides one-page illustrated summaries of fatal mining accidents to show miners and mine operators recent fatal accidents in the mining community and how to avoid the same problems in the future.

Roof Evaluation and Accident Prevention Program (REAP). As part of the REAP program, the latest technical and educational materials on roof control are sent to mine operators who use these materials at their safety meetings or during refresher training programs. Improved technology and other technical assistance is also provided to the mining industry under this program.

Special Safety and Health Activities. MSHA's Program in Accident Reduction (PAR) focuses intensively on metal and nonmetal mining operations with significantly high rates of injury. Inspectors supplement the usual program of inspections with efforts to improve the safety program with job safety analysis, accident prevention training, and safety awareness on the part of both labor and management. The Compliance Assistance Visit (CAV), thousands of which have been conducted since the program began in 1980, alerts metal and nonmetal mine operators to possible hazards at their operations. MSHA's NFDL Program is aimed at bringing down the rate of nonfatal accidents with days lost (NFDLs) at coal mining operations by designing a special program for reducing accidents at mines which have a high incidence of NFDL injuries. MSHA's Respirable Dust Program seeks to protect the health of miners by preventing exposures to excessive levels of dust in the work environment in an effort to reduce the prevalence of coal workers' pneumoconiosis (CWP).

Department of Transportation (DOT)

The DOT assumes an important role in transportation safety and in the environmental impact of transportation. Prevention-related programs are conducted by various DOT agencies: the Coast Guard, for marine environmental protection and boating safety; the Federal Aviation Administration, for safety of civilian aircraft, personnel, passengers and freight, as well as for pollution control; the Federal Highway Administration, for highway safety and motor carrier safety; the Federal Railroad Administration, for motor vehicle standards, traffic safety, and consumer information; the Research and Special Programs Directorate, for safe transportation of dangerous cargoes; the Transportation Systems Center, for motor, rail, and aircraft safety research; and the Urban Mass Transportation Administration, for air pollution control devices for buses and for features that facilitate use by the elderly and the handicapped. Of particular importance is the National Highway Traffic Safety Administration, which promulgates safety standards for motor vehicles,

conducts public consumer information programs, and implements other programs to reduce deaths, injuries, and economic losses resulting from traffic accidents.

National Highway Traffic Safety Administration (NHTSA) Prevention Highlights

Occupant Protection. Currently 22,000 passenger car occupants are killed in crashes annually, and an estimated 1.5 million more are injured. Nearly half of these deaths and injuries could be prevented by the use of safety belts. Because only about 14 percent of drivers and even fewer passengers use safety belts, NHTSA's national safety belt campaign aims to educate and encourage motorists in the effectiveness and use of this life-saving technology. Passive restraint technology—air bags and automatic safety belts-can also contribute to the saving of lives on our highways, and therefore the Secretary of Transportation has proposed a phased-in schedule whereby all vehicles manufactured for sale in the United States would be required to have such automatic restraint protection. If, however, two-thirds of the U.S. population is covered by state-passed legislation that mandates safety belt use, the requirements for automatic restraints will no longer apply.

Child Safety Seats. Currently 49 States and the District of Columbia require the use of child safety seats for children up to the age of six years riding in automobiles. Because of these laws, usage of child safety seats has nearly doubled in the past two years. Further, a child safety seat may now be used both in the automobile and on an airplane, since a unified safety standard was issued by NHTSA and the Federal Aviation Administration.

Drunk Driving. Getting the drunk driver off the road has been a major prevention emphasis of NHTSA, especially during the last four years. Since nearly one-half of all fatal highway crashes are alcohol-related, the efforts of Federal, State, and local enforcement officials and of volunteer groups such as Mothers Against Drunk Drivers (MADD), Remove Intoxicated Drivers (RID), and Students Against Driving Drunk (SADD) have succeeded in a nation-wide effort to arrest, convict, and suspend the licenses of nearly a million drivers. NHTSA has identified 16 communities throughout the United States willing to work with the Department of Transportation to implement a comprehensive anti-drunk driving program involving a systems approach, community focus, financial self-sufficiency through fines and court costs, and full-fledged citizen support. This "targets of opportunity" program is serving as a catalyst to encourage other communities to act in the prevention of drunk driving.

Department of the Treasury

Law enforcement agencies of the Department of the Treasury contain important prevention activities. The Bureau of Alcohol, Tobacco, and Firearms (BATF) regulates the tobacco, legal firearms, and explosive industries. The Department of Health and Human Services works with BATF on issues related to alcohol and cigarette excise tax.

Department of the Treasury Prevention Highlights

Fetal Alcohol Syndrome Update. BATF is conducting an ongoing information compaign with other Federal and State agencies, the beverage alcohol industry, and private health organizations on the possible correlation between alcohol consumption and birth defects, better known as Fetal Alcohol Syndrome (FAS). The FAS campaign's purpose has been to encourage pregnant women to avoid excessive alcohol consumption and thus enhance the prospects for normal, healthy children.

Environmental Protection Agency (EPA)

One of the principal objectives of the Environmental Protection Agency (EPA) is protection of public health. The agency's activities in pollution abatement and control, enforcement of antipollution laws and regulations, and research and development to support establishment of standards and control strategies all contribute importantly to health protection. Research programs at EPA are designed to identify potential environmental problems, examine possible carcinogens in environmental pollutants, and develop exposure-monitoring concepts and techniques. Major EPA program areas are air quality, water quality (including safe drinking water), pesticides, solid waste, and toxic substances.

EPA Prevention Highlights

Curriculum for Environmental Health. The EPA actively supports the Interagency Education Program Liaison Group (IEPLG), whose purpose is to provide useful guidelines and materials for education of health professionals and the public. The objectives of the IEPLG are to (a) improve and increase knowledge among its audiences concerning the recognition, treatment, and prevention of environmentally related illness and (b) promote development of local community involvement in environmental health education outreach programs. The IEPLG works under the auspices of the Task Force on Environmental Cancer and Heart and Lung Disease, which is chaired by the EPA Administrator.

In 1984, the IEPLG, in cooperation with EPA, compiled and published a major educational resource document, ***Environmental Health-Related Information: A Bibliographic Guide to Federal Sources for the Health Professional.*** Future plans include active EPA participation in and support of workshops to (a) stimulate community leadership interest in establishing local pilot projects to promote and facilitate education about the impact of the environment on human health in general

and on their community in particular and (b) develop a prioritized assessment of the curriculum, instruction, data, research, and coordinating mechanism needs of health care professional educators.

Pesticides Packaging. Since 1979 EPA's Office of Pesticide Programs has been involved in pesticides packaging programs intended to limit the number of accidental injuries suffered by adults and children who handle these products. Residential-use pesticides that meet certain toxicity criteria are required to use child-resistant packaging. EPA and the Consumer Product Safety Commission work together on Child Resistant Packaging regulations. Voluntary closed systems packaging standards which limit exposure to pesticides and promote their safe transfer are under development by EPA and the National Agricultural Chemical Association. The purpose of the closed system packaging standards is to allow agricultural workers to use certain toxic pesticides with minimum risk of exposure. Tamper-resistant bait boxes regulations, which are designed to limit accidental exposure to rodenticides, are also under development at EPA. The purpose of these tamper resistant bait boxes regulations is to reduce the risk of children and pets suffering accidental injury from contact with loose baits in commercial and residential situations.

Federal Trade Commission (FTC)

The Federal Trade Commission (FTC) is responsible for enforcing the antitrust laws; for regulating cigarette labeling and advertising; and for protecting consumers from unfair or deceptive acts or practices in the advertising, packaging, and labeling of consumer products and the advertising of services. With respect to disease prevention and health promotion, the Commission engages in two principal activities: (a) law enforcement initiatives designed to prevent the dissemination of false or deceptive information about health-related products and services, to ensure that consumers are neither harmed directly by deceptively marketed goods and services nor delayed in obtaining appropriate and needed health services while they try services or products of little or no value in treating potentially serious health problems; and (b) antitrust law enforcement to increase patient access to affordable health care and to remove unreasonable restraints on health care providers, including, for example, health maintenance organizations and nurse practitioners working in disease prevention and health promotion.

FTC Prevention Highlights

Orders Prohibiting Unfair or Deceptive Advertising. The Commission has issued consent orders prohibiting unfair or deceptive advertising of "laser facelifts," weight control pills and devices, "cancer-curing" food supplements, aspirin-free drugs, and arthritis pain relievers.

Complaints Charging Unfair or Deceptive Advertising. The FTC filed complaints challenging unfair or deceptive advertising of hair analysis services that allegedly identify body mineral levels and recommend dietary supplements and of toothpaste that purportedly cures gum disease.

Investigating Restraints on HMO Health Care Providers. To foster the availability of health care providers who emphasize early intervention and the prevention of serious illness, the FTC has investigated, for possible violation of the antitrust laws, organizations that have taken collective action to inhibit health maintenance organizations or practice by nurse practitioners working in rural health clinics.

Investigating Restraints on Advertising by Dentists. The FTC investigates and challenges unreasonable restraints on advertising by dentists who encourage consumers to seek preventive dental care.

U.S Consumer Product Safety Commission (CPSC)

The U.S. Consumer Product Safety Commission is an independent regulatory agency created in 1973 to protect consumers from unreasonable risks of injury associated with consumer products. The Commission administers the Consumer Product Safety Act, the Flammable Fabrics Act, the Federal Hazardous Substances Act, the Poison Prevention Packaging Act, and the Refrigerator Safety Act.

CPSC Prevention Highlights

Chronic Chemical Hazards. The CPSC's efforts to prevent chronic chemical hazards related to consumer products are diverse. For instance, the CPSC examines the substances in various rubber and plastic children's products because these products may contain potentially cancer-causing substances. The Commission is working with the pacifier industry to reduce levels of nitrosamines in rubber pacifiers, and the Commission also has established a Chronic Hazard Advisory Panel to evaluate the carcinogenicity of di(2-ethylhexyl)phthalate (DEHP), a substance found in vinyl pacifiers and plastic products. Preventing chemical hazards in school laboratories is another area of CPSC focus. The Commission has developed a program to inform teachers about chronic adverse health effects of selected laboratory chemicals and to advise teachers regarding less hazardous substitute chemicals and precautions that can minimize classroom exposure. Toxic gases emitted from unvented gas space heaters and kerosene heaters comprise another chronic chemical hazard area currently under Commission investigation. In cooperation with the kerosene heater industry and Underwriters Laboratories, the Commission is assisting in the development of a voluntary standard to limit emissions of toxic gases from kerosene heaters.

Acute Chemical Hazards. The Commission has developed and distributed "Text for Pharmacists and

Physicians'' to increase awareness of the need to employ child-resistant packaging for prescription drugs and to improve compliance with the Poison Prevention Packaging Act. Increasing the use of child-resistant closures should result in further reduction of childhood poisonings involving prescription drugs.

Other Hazards to Children and Electrical Shock and Mechanical Hazards. The Commission is monitoring voluntary standards activities which address the risks to children posed by toy chests, playpens, high chairs, strollers and carriages, home playgound equipment, baby walkers, baby gates and enclosures, cribs, and toy safety. The Commission continues its cooperation with industry to seek improved standards for preventing dangerous electric shock and fires from appliances and house wiring. The Commission also monitors voluntary standards activities for preventing bodily injuries from lawn mowers, chain saws, and other outdoor powered equipment.

Fire and Thermal Burn Hazards and Hazards From Household and Structural Products. The Commission continues to cooperate with industry and voluntary standards organizations in efforts to reduce fire hazards from wood and coal burning heating equipment, upholstered furniture, and gas-fired appliances and to reduce hazards associated with hot tubs and spas.

Chapter 4
DHHS Prevention Inventories

This chapter presents a comprehensive inventory of health promotion and disease prevention programs and activities within the Department of Health and Human Services. Together this inventory and the Chapter 3 narrative provide a complete picture of DHHS activities directed toward improving the general health status of the American people.

The first inventory of DHHS health promotion and disease prevention programs was published in 1977 as an appendix to *Disease Prevention and Health Promotion: Federal Programs and Prospects.* Since then, the inventory has been reorganized into 16 categories, the 15 prevention priority areas of *Healthy People* plus a category of cross-cutting activities. The inventory includes programs of the Public Health Service, the Health Care Financing Administration, the Office of Community Services, and the Office of Human Development Services. Resource levels are reported in detail for Fiscal Year 1983 and Fiscal Year 1984, and a summary of estimated Fiscal Year 1985 resource levels for the Department of Health and Human Services is also provided.

Three points about the inventory are important to note. First, the figures in this inventory may vary slightly from figures contained in other documents because each agency applied its own criteria, within general guidelines, for identifying the activities reported here. For example, some agencies reported only primary prevention activities undertaken to prevent the occurrence of disease or illness, whereas other agencies included secondary prevention activities initiated after the onset of a disease process but prior to the onset of symptoms. Second, a number of programs, such as Medicaid, provide preventive health services, but current reporting systems cannot identify the specific sums spent for these services. In some instances an estimate is provided; in others, the sum is excluded.

Third, in order to provide maximum flexibility to the States, to reduce their administrative burden, and to increase efficiency, block grant funds did not require detailed reporting. Therefore, funding for specific prevention activities cannot be displayed unless the funding

represents identifiable categorical set-asides (i.e., funding designated for specific activities within the total block grant funding). The Operating Divisions of the Department have referenced their block grants in the major prevention priority areas specifically mentioned in their block grant legislation or in the areas where most States could be expected to put most of their block grant resources. The listing cannot be inclusive, and actual funding (if any) is not always known. The prevention inventories include the total funding associated with both the Prevention Health Services Block Grant and the Maternal and Child Health Services Block Grant, on the assumption that all of these block grant activities are prevention related. Table 1 shows total block grant funding; block grant funding identified in the prevention inventories; block grant funds targeted to non-prevention activities; estimated prevention funding displayed under the "Cross-Cutting and Other" category; and block grant funding not included in the inventories amounting to $3,439,544,000 in FY 1983 and to $3,438,813,000 in FY 1984, some portion of which funding may have been used for prevention activities.

The following list is a key to footnoted items in Table 6:

a. Funded with U.S.-owned foreign currencies obligated in prior years.
b. Dollar amount not available.
c. Appropriated to Health Resources and Services Administration; administered by the Office of the Assistant Secretary for Health.
d. Plus significant but undetermined portion of program funds.
e. Staff time; no program funds expended.
f. Contract activity in Direct Operations.
g. Multi-purpose survey; dollar amount directly attributable to prevention initiatives cannot be determined separately.
h. Includes funds from other agencies through reimbursable agreements.
i. All block grant funding is not displayed in the inventories because some funded activities are not prevention, and others are impossible to identify as prevention because detailed reporting is not required. Only the totals for the Prevention Health Services Block Grant (shown as a lump sum entry under the "Cross-Cutting and Other" category) and the Maternal and Child Health Services Block Grant (displayed in three separate categories); an estimated portion, based on legislative requirements, of the Alcohol, and Drug Abuse and Mental Health Services Block Grant; and specifically identified set-aside resources are displayed in the inventories. How funds are actually spent is not known unless they are targeted set-asides.
j. These figures represent the legislative minimum which the States are required to obligate on prevention and early intervention programs. While the States have considerable latitude to increase this amount, data are not available on actual State expenditures.
k. These figures represent the balance of the total MCH block grant funding (other amounts are displayed under the "Prevention and infant Care" and "Accident Prevention and Injury Control" categories). While the total MCH Services Block Grant is presumed to reflect prevention funding, data are not available on actual State expenditures for other than targeted set-aside funds.

Table 1

Block Grant Resources

Block Grants	*FY 1983 Funding*	*FY 1984 Funding*
Total Block Grant Funding		
Alcohol, and Drug Abuse and Mental Health (ADAMHA) Services Block Grant	$ 468,000,000	$ 462,000,000
Preventive Health Services Block Grant	85,300,000[1]	87,136,000[1]
Maternal and Child Health (MCH) Services Block Grant	478,000,000[2]	399,000,000[2]
Community Services Block Grant	373,000,000[3]	348,000,000[3]
Social Services Block Grant	2,675,000,000	2,700,000,000
Total, Block Grant Funding	$4,079,300,000	$3,996,136,000
Funds Targeted to Prevention Activities		
ADAMHA Services Block Grant	$ 45,136,000[4]	$ 39,867,000[4]
Preventive Health Services Block Grant	85,300,000[1]	87,136,000[1]
MCH Services Block Grant	478,000,000[2]	399,000,000[2]
Community Services Block Grant	5,760,000[3]	5,760,000[3]
Total, Targeted to Prevention	$ 614,196,000	$ 531,763,000
Funds Targeted to Other Than Prevention Activities		
Community Services Block Grant	$ 25,560,000[3]	$ 25,560,000[3]
Total, Targeted to Other Than Prevention	25,560,000	25,560,000
Total Additional Funding Available for Prevention Activities	$3,439,544,000[5]	$3,438,813,000[5]

[1] The total Preventive Health Services Block Grant Funding is included in the Prevention Inventories under the "Cross-Cutting and Other" category. (See Table 6.) The $3,000,000 Rape Prevention set-aside (targeting of funds by Congress within a block grant for a specific program purpose) is included within the total funding of $85,300,000 in FY 1983 and $87,136,000 in FY 1984.

[2] Of the total funding of $478,000,000 in FY 1983 and $399,000,000 in FY 1984, $45,000,000 in 1983 and $46,000,000 in FY 1984 are included in the Prevention Inventories (Table 6) under the "Prevention and Infant Care" category, and $300,000 in FY 1983 and FY 1984 is included in the "Accident Prevention and Injury Control" category. The differences, $432,700,000 in FY 1983 and $352,700,000 in FY 1984, are included in the "Cross-Cutting and Other" category.

[3] Of the total set-aside funding of $31,320,000 in FY 1983 and FY 1984, $5,760,000 is included in the Prevention Inventories (Table 6) under the "Physical Fitness and Exercise" category. The differences, $25,560,000 in FY 1983 and FY 1984, are targted to other than prevention activities.

[4] The figures represent the legislative minimum which the States are required to obligate on prevention and early intervention programs. While the States have considerable latitude to increase this amount, data are not available on actual State expenditures.

[5] Reflects total block grant funding, minus the funding targeted to prevention or to other specific program activities. States, at their discretion, may have spent some portion of this funding balance on prevention activities. Since there were no specific reporting requirements, it is not known how the funds were spent.

Table 2

FY 1983 and FY 1984 Resources for Prevention Activities by Agency, Department of Health and Human Services

Agency	*FY 1983 Resources**	*FY 1984 Resources**
Public Health Services		
Alcohol, Drug Abuse, and Mental Health Administration	$ 62295,444	$ 61,841,642
Centers for Disease Control	283,473,439	380,023,698
Food and Drug Administration	361,844,000	392,649,000
Health Resources and Services Administration	1,040,578,765	1,013,131,937
National Institutes of Health	938,370,000	1,051,229,000
Office of the Assistant Secretary for Health	141,725,035	162,774,675
Health Care Financing Administration	270,365,366	284,405,142
Office of Community Services	5,760,000	5,760,000
Office of Human Development Services	472,657,324	472,178,038
Total Resources	**$3,577,069,373**	**$3,823,993,132**

*Reported by individual agencies.

Table 3

FY 1983 and FY 1984 Resources by Prevention Priority Area, Department of Health and Human Services

Prevention Priority Area	*FY 1983 Resources**	*FY 1984 Resources**
1. Family Planning	$ 356,497,625	$ 380,814,430
2. Pregnancy and Infant Health	370,287,699	366,556,534
3. Immunization	134,591,000	140,973,452
4. Sexually Transmitted Disease Control	62,529,500	73,136,900
5. High Blood Pressure Control	14463,247	18,300,636
6. Toxic Agent and Radiation Control	232,795,000	262,217,710
7. Occupational Safety and Health	72894,519	92,722,182
8. Accident Prevention and Injury Control	7,704,250	9,094,736
9. Fluoridation and Dental Health	19,250,861	32,463,761
10. Surveillance and Control of Infectious Diseases	185,064,940	242,850,105
11. Smoking Control	12,719,511	21,398,850
12. Alcohol and Drug Misuse Prevention	118,086,621	126,545,239
13. Improved Nutrition	552,460,089	575,382,246
14. Physical Fitness and Exercise	9,669,660	10,25 1,034
15. Control of Stress and Violent Behavior	6,691,530	9,483,797
16. Cross-Cutting and Other	1,421,363,321	1,461,801,520
Total Resources	**$3,577,069 ,373**	**$3,823,993,132**

* Reported by individual agencies.

Table 4

DHHS Agencies Reporting Prevention Activities in 1984 by Priority Area

Department of Health and Human Services / Prevention Priority Area	1. Family Planning	2. Pregnancy and Infant Health	3. Immunization	4. Sexually Transmitted Disease Control	5. High Blood Pressure Control	6. Toxic Agent and Radiation Control	7. Occupational Safety and Health	8. Accident Prevention and Injury Control	9. Fluoridation and Dental Health
Public Health Service									
Alcohol, Drug Abuse, and Mental Health Administration	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Centers for Disease Control	850,430	2,5 12,430	42,054,000	54,688,000	50,000	4,801,513	65,872,000	680,000	500,000
Food and Drug Administration	—	—	12,963,000	—	—	77,224,000	—	—	—
Health Resources and Services Administration	40,200,000	314,360,381	15,470,000	7,258,900	52,785	82,197	15,437,482	4,300,000	12,383,000
National Institutes of Health	34,764,000	35,528,000	25,423,000	11,190,000	17,910,000	179,992,000	10,964,000	3,805,000	19,143,000
Office of the Assistant Secretary for Health	140,000,000	13,895,723	63,452	—	287,851	118,000	448,700	309,736	437,761
Health Care Financing Administration	165,000,000	—	45,000,000	—	—	—	—	—	—
Office of Community Services	—	—	—	—	—	—	—	—	—
Office of Human Development Services	—	260,000	—	—	—	—	—	—	—
Total Resources Reported	**$380,814,430**	**$366,556,534**	**$140,973,452**	**$73,136,900**	**$18,300,636**	**$262,217,710**	**$92,722,182**	**$9,094,736**	**$32,463,761**

Table 4, continued

Prevention Priority Area, continued / *Department of Health and Human Services*	*10. Surveillance and Control of Infectious Diseases*	*11. Smoking Control*	*12. Alcohol and Drug Misuse Prevention*	*13. Improved Nutrition*	*14. Physical Fitness and Exercise*	*15. Control of Stress and Violent Behavior*	*16. Cross-Cutting and Other*	**Total Resources Reported**
Public Health Service								
Alcohol, Drug Abuse, and Mental Health Administration	$ —	$ 2,023,678	$ 9,850,964	$ —	$ —	$3,301,000	$ 46,666,000	**$ 61,841,642**
Centers for Disease Control	85,631,105	50,000	50,000	1,648,600	50,000	325,000	120,260,620	**380,023,698**
Food and Drug Administration	8,843,000	—	90,339,000	59,908,000			143,372,000	**392,649,000**
Health Resources and Services Administration	125,200,000	—	23,334,557	3,362,946	182,034	383,164	451,124,491	**1,013,131,937**
National Institutes of Health	23,176,000	16,052,000	2,747,000	63,098,000	3,248,000	5,346,000	598,843,000	**1,051,229,000**
Office of the Assistant Secretary for Health	—	3,273,172	123,718	36,700	1,011,000	21,700	2,747,162	**162,774,675**
Health Care Financing Administration	—	—	—	—		—	74,405,142	**284,405,142**
Office of Community Services	—	—		—	5,760,000	—	—	**5,760,000**
Office of Human Development Services	—	—	100,000	447,328,000		106,933	24,383,105	**472,178,038**
Total Resources Reported	**$242,850,105**	**$21,398,850**	**$126,545,239**	**$575,382,246**	**$10,251,034**	**$9,483,797**	**$1,461,801,520**	**$3,823,993,132**

Table 5

Estimated FY 1985 Resources for Prevention Activities by Agency, Department of Health and Human Services

Department of Health and Human Services		*Estimated FY 1985*
Public Health Service		
Alcohol, Drug Abuse, and Mental Health Administration[1]		$ 15,500,000
Centers for Disease Control		408,300,000[2]
Food and Drug Administration		413,800,000
Health Resources and Services Administration (HRSA)		
Indian Health Service Preventive Health Services		65,200,000
Maternal and Child Health Block Grant		478,000,000
Family Planning		142,500,000
HRSA Subtotal	$685,700,000	
National Institutes of Health[1]		1,209,200,000
Office of the Assistant Secretary for Health (OASH)		
Smoking and Health		3,500,000
Disease Prevention/Health Promotion		3,600,000
Physical Fitness and Sports		1,400,000
Adolescent and Family Life		14,800,000
OASH Subtotal	$23,300,000	
Public Health Service Subtotal	$2,755,800,000	
Health Care Financing Administration (HCFA)		
Medicaid[3]		
Family Planning		193,600,000
Early and Periodic Screening, Diagnosis, and Treatment		50,000,000[4]
Medicare		
Pneumococcal Vaccinations		50,000,000
Prevention Research		400,000
HCFA Subtotal	$294,000,000	
Office of Refugee Resettlement		
Preventive Health		8,400,000
Office of Human Development Services (OHDS)		
Administration on Aging		
Nutrition: Congregate and Home-Delivered Meals		403,900,000

Table 5, continued

Department of Health and Human Services		*Estimated FY 1985*
OHDS, continued		
Administration on Children, Youth, and Families		
Headstart (Nutrition and Health Services)		$ 125,600,000
Child Abuse and Neglect State Grants		9,000,000
OHDS Subtotal	$538,500,000	
TOTAL HHS Prevention Resources		**$3,596,700,000**

[1]Prevention research only.
[2]This sum includes the Preventive Health Services Block Grant ($89.5 million).
[3]Represents only the Federal share of the cost.
[4]Screening expenditures only; expenditures for treatment cannot be separately identified.
Notes. "Total HHS Prevention Resources" represents the core support for prevention research, disease control, and health promotion. All other block grants not listed in this table are excluded because funding directly attributable to prevention activities cannot be determined separately.

(Footnotes **are on page** *106)*

Table 6

FY 1983 and FY 1984 Prevention Inventories by Agency and Priority Area, Department of Health and Human Services

		1983 *Resources*	1984 *Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Health Promotion and Education**					
	Epidemiologic Research, Surveillance, and Consultation	$ 597,625	$ 850,430	•		
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Community Health Centers	32,400,000	30,000,000	•		
	Migrant Health	2,700,000	3,000,000	•		
	Maternal and Child Health Services Block Grant	i	i	.		
	National Health Service Corps	6,200,000	5,200,000	.		
	Indian Health Service					
	Clinical Services and Preventive Health	2,000,000	2,000,000	•		
National Institutes of Health	**Division of Research Resources**					
	Family Planning Research	524,000	1,962,000			
	National Institute of Child Health and Human Development					
	Demographic and Behavioral Science	11,974,000	15,406,000			
	Reproductive Medicine	9,321,000	8,468,000			
	Contraceptive Development	9,525,000	6,397,000			
	Contraceptive Evaluation	2,168,000	2,531,000			
Office of the Assistant Secretary for Health	**National Center for Health Statistics**					
	National Survey of Family Growth	g	g			
	Office of Population Affairs					
	Family Planning	124,088,000[c]	140,000,000[c]	•		•

1. Family Planning (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Health Care Financing Administration	**Bureau of Program Operations**					
	Medicaid Support for Family Planning (Federal Share)	$155,000,000	$ 165,000,000	•		
Office of Community Services	**Office of Special Projects Assistance**					
	Community Services Block Grant	i	i	.		
Office of Human Development Services	**Office of Policy and Legislation**					
	Social Services Block Grant	i	i	.		

(table continues)

2. Pregnancy and Infant Health

1983 Total $370,287,699
1984 Total $366,556,534

*(Footnotes are on **page** 106)*

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Environmental Health**					
	Epidemiologic Consultation on Birth Defects and Genetics Laboratory	$ 1,140,000	$ 1,662,000	•	•	
	Center for Health Promotion and Education					
	Epidemiologic Research, Surveillance, and Education	591,625	850,430	•	•	
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Community Health Centers	172,800,000	161,800,000	•		
	Migrant Health	15,200,000	16800,000	•		
	Maternal and Child Health Services Block Grant	45,000,000[i]	46,000,000[i]	•		
	National Health Service Corps	39,000,000	32,800,000	•		
	Screening, Identification, and Services for Blood Disorders/Chromosomal Abnormalities and General Genetic Diseases/Maternal and Child Health/Genetics Program	7,300,000	7,300,000	•		
	Bureau of Health Professions					
	Nurse Midwifery Training Programs	568,255	2,554,726			
	Research Grants: Nursing, Maternal Postures, Fetal Position/Presentation	70,103	72,107		•	
	Nursing Promoting of Mother-Infant Acquaintance	60,055	67,011		•	
	Parenting Enhancement Program for High-Risk Adolescents	19,545	—		•	
	Parent/Infant Interaction in Normal and High-Risk Subjects	138,550	—		•	
	Interaction Between Mothers and Handicapped Infants	—	68,127		•	
	Sleep Disturbances of Infants of Adolescent Mothers	—	52,738		•	
	Age-Appropriate Provocative Behavior, Birth to 36 Months	—	74,342		•	

2. Pregnancy and Infant Health (Continued)

(Footnotes are on page 106)

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
	Antenatal Hospitalization, Maternal Behavior, and the Family	$ —	$ *95,116*			
	Mothers' Health Beliefs and Use of Well-Baby Services	—	178,916			
	A Study of Early Management of Breast Feeding	—	68,191			
	Adjustment to Parenthood: Model and Scale Development	—	50,556			
	Distress Cues During Feeding of Cardiac Infants	—	63,427			
	Antepartum Stress: Effect on Family, Health, and Functioning	—	101,924			
	Parental Stress in the Neonatal Intensive Care Unit	—	61,056			
	Postpartum Early Discharge Effects on Low Income Mothers	—	90,061			
	Mother's Vocal Emotion and Infant Behavior Regulation	—	55,951			
	Indian Health Service					
	Clinical Services and Preventive Health	42,000,000	46,000,000	•		
	Office of International Health Affairs					
	Neonatal Care Study in Egypt (with the Office of International Health, OASH)	a	a			
National Institutes of Health	**Division of Research Resources**					
	Pregnancy and Infant Care Research	3,019,000	3,045,000			
	National Cancer Institute					
	Cellular Carcinogenesis and Tumor Promotion	1,621,000	1,785,000			
	National Eye Institute					
	Retrolental Fibroplasia and Other Proliferative Retinopathies	1,090,000	966,000			

(table continues)

2. Pregnancy and Infant Health (Continued)

(Footnotes are on page 106)

	1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Effects of Research on Visual Deprivation Related to the Prevention of Amblyopia and Strabismus	$ 4,206,000	$ 3,871,000		•	
National Institute of Child Health and Human Development					
High Risk Pregnancy	8,831,000	10,307,000		•	
Fetal Pathology	4,531,000	6,628,000		•	
Prematurity	3,946,000	4,192,000		•	
Disorders of the Newborn	4,646,000	3,814,000		•	
Sudden Infant Death Syndrome	1,780,000	*657,000*		•	
Fogarty International Center					
Pregnancy and Infant Care Research	247,000	*263,000*		•	
Office of the Assistant Secretary for Health					
National Center for Health Services Research and Health Care Technology Assessment					
Health Behavior in Pregnancy: Testing a General Model	e	*e*		•	
The Cultural Context of Childhood Diarrhea in the Developing World	e	*e*		•	
Evaluation of the Effects of Fetal Monitoring on Mortality and Development	280,207	*289,892*		•	
Factors Affecting Amniocentesis Utilization	33,940	—		•	
Emotional and Developmental Impact of Maternal Serum Alpha-Fetoprotein (MSAFP) Screening	106,737	—		•	
Comparison of the Management of Labor and Delivery Activities at Two Different Birthing Settings	—	*21,541*		•	
Determination of Linkage Between Apnea in Preterm Infants and the Location of Windows in the Neonatal Intensive Care Nursery	—	*21,076*		•	

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	Evaluation of the Appropriateness and Process of Transfer of High Risk Neonates and Pregnant Women in a Regionalized Perinatal Care Program	$ —	$ 141,614		•	
	A Utilization and Outcome Evaluation of Infant Transport	—	21,600		•	
	National Center for Health Statistics					
	National Natality Survey and National Fetal Mortality Survey	g	g		•	
	Office of Adolescent Pregnancy Programs					
	Adolescent Family Life Demonstration Programs	10,251,106	12,100,000	•		
	Adolescent Family Life Research Programs	1,458,002	1,300,000		•	
	Office of Disease Prevention and Health Promotion					
	Healthy Mothers/Healthy Babies Campaign	e	e			
Office of Human Development Services	**Administration for Children, Youth, and Families**					
	Head Start/Parent Education Program and Parent-Child Centers	260,000	260,000	•		
	Program to Keep Children Healthy and Promote Early Diagnosis of Child Health Problems (Title IV-B)	d	d		•	
	Office of Policy and Legislation					
	Social Services Block Grant	i		•		
	Administration for Native Americans					
	Prevention of Fetal Alcohol Syndrome on the Blackfoot Reservation	26,574			•	

(table continues)

3. Immunization

1983 Total $134,591,000
1984 Total $140,973,452

(Footnotes are on page 106)

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Prevention Services**					
	Immunization Grant Program	$ 27,428,000	$ 30,482,000	•		
	Immunization/Technical Assistance and Public Education	7,253,000	7,572,000	•	•	
	Vaccine Stockpile	4,372,000	4,000,000	•		
	Other Program Offices					
	Preventive Health and Health Services Block Grant		i	.	•	
Food and Drug Administration	**Center for Drugs and Biologics**					
	Vaccine Testing	12,057,000	12,963,000		•	
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Community Health Centers	4,680,000	4,380,000	•		
	Migrant Health	650,000	*710,000*	.		
	Maternal and Child Health Services Block Grant		i	.		
	National Health Service Corps	1,770,000	1,500,000	•		
	Indian Health Service					
	Clinical Services and Preventive Health	8,360,000	8,880,000	•		
National Institutes of Health	**Division of Research Resources**					
	Immunizations Research	843.000	*810,000*		•	

3. Immunization (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	National Institute of Allergy and Infectious Diseases					
	Program to Reduce the Incidence of Bacterial and Viral Diseases Preventable by Immunization (excluding sexually transmitted diseases)	$ 21,321,000	$ 23,737,000		•	
	National Institute on Aging					
	Immune Response of Elderly to Pneumococcus	163,000	350,000		•	
	Fogarty International Center					
	Immunization Research	494,000	526,000			
Office of the Assistant Secretary for Health	**National Center for Health Services Research and Health Care Technology Assessment**				•	
	Provide Data and Other Information to Help Develop a General Program for Handling Claims for Inquiries Resulting From Routine Immunizations	—	63,452		•	
Health Care Financing Administration	**Bureau of Program Operations**					
	EPSDT	d	d	•		
	Immunization Services	d	d	•		
	Medicare Pneumococcal Vaccinations	45,000,000	45,000,000	•		

(table continues)

4. Sexually Transmitted Disease Control

1983 Total $62,529,500
1984 Total $73,136,900

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Centers for Disease Control	**Center for Prevention Services**					
	Sexually Transmitted Diseases Grant Program	$ 40,000,000	$ 45,510,000	•		
	Sexually Transmitted Diseases/Technical Assistance Research and Public Information	7,692,000	9,178,000	•	•	
Health Resources and Services Administration	**Indian Health Service**					
	Clinical Services and Preventive Health	7,047,500	7,258,900	•		
National Institutes of Health	**Division of Research Resources**					
	Sexually Transmitted Diseases Research	3,000	132,000		•	
	National Cancer Institute					
	Education and Information	—	26,000		•	
	National Eye Institute					
	Trachoma	724,000	642,000		•	
	National Institute of Allergy and Infectious Diseases					
	Vaccine Development	4,493,000	5,857,000		•	
	National Institute of Child Health and Human Development					
	Reproductive Medicine	397,000	319,000		•	
	Mental Retardation	207,000	221,000		•	
	Congenital Malformations	77,000	97,000		•	
	Neonatal Infection	242,000	663,000		•	
	High Risk Pregnancy	323,000	281,000		•	
	Prematurity	713,000	2,098,000		•	
	Disorders of the Newborn	674,000	854,000		•	

5. High Blood Pressure Control

1983 Total $14,463,247
1984 Total $18,300,636

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Centers for Disease Control	**Center for Health Promotion and Education**					
	Behaviorial Risk Factor Surveillance	—	$ 50,000	•	•	
	Other Program Offices					
	Preventive Health and Health Services Block Grant		i	·	•	
Health Resources and Services Administration	**Bureau of Health Professions**					
	Connecticut AHEC	e	14,452			•
	Research Grant: Identification of Variables that Characterize Hypertensives	75,829	38,333		•	
National Institutes of Health	**Division of Research Resources**					
	High Blood Pressure Control Research	1,201,000	3,127,000		•	
	National Heart, Lung, and Blood Institute					
	National High Blood Pressure Education Program	1,479,000	1,241,000	•	•	•
	Mass Media	480,400	497,000	•	•	•
	Impact of Statewide Demonstration Project	586,631	600,000		•	
	Hypertension Detection and Follow-Up Program	1,140,763	1,200,000		•	
	Specialized Centers of Research	6,730,029	6,800,000		•	
	Epidemiology	1,133,580	1,200,000		•	
	Other Hypertension Research	963.597	1,712,000	•	•	
	National Cancer Institute					
	Education and Information		23.000	•		

table continues)

5. High Blood Pressure Control (Continued)

(Footnotes are on page 106)

		1983 Resources	*I984 Resources*	*Services*	*Research*	*Health Professions Development*
Office of the Assistant Secretary for Health	**National Institute on Aging**					
	Hypertension in the Elderly	$ *362,000*	$ 1,247,000		•	
	Fogarty International Center					
	High Blood Pressure Control Research	*247,000*	*263,000*		•	
	National Center for Health Services Research and Health Care Technology Assessment					
	Evaluation of the Long-Term Effects of Special Packaging of Antihypertensive Medication on Compliance and Blood Pressure Control	*30,442*	—		•	
	Feasibility of Using Computer-Based and Voice Synthesizing Technology to Monitor Compliance With Therapy for Hypertensive Patients at Home	—	*287,851*		•	
	Office of Disease Prevention and Health Promotion					
	Trilateral Project on High Blood Pressure Education and Control in the Black Population	e	e			•
Office of Human Development Services	**Administration on Aging**					
	Rural Day Care for the Elderly (Illinois Department of Aging)	*32,976*	—			

6. Toxic Agent and Radiation Control

1983 Total $232,795,000
1984 Total $262,217,710

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Centers for Disease Control	**Center for Environmental Health**					
	Environmental Hazards/Epidemiology, Laboratory Support and Technical Assistance to States	$ 3,841,000	$ 41,686,513	•	•	
	Education on Lead Hazards	133,000	115,000	•		
Food and Drug Administration	**Center for Food Safety and Applied Nutrition**					
	Food Additives	14,380,000	18,835,000	.	•	
	Chemical Contaminants	21,501,000	27,168,000	•	•	
	Cosmetics	2,498,000	3,344,000	•	•	
	State Cooperative Food Programs	6,501,000	6,745,000	•	•	
	Study in Egypt of Poisonous Plants Contaminating Edible Ones and Toxic Substances in Plant Foods (with the Office of International Health, OASH)	a	a		•	
	National Center for Toxicological Research					
	Programs to Study the Biological Effect of Potentially Toxic Chemical Substances Found in Man's Environment	20,308,000	21,132,000		•	
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Migrant Program: Pesticide Poisoning Prevention	***50,000***	***50,000***	•	•	
	Study in India of Role of Transfer Factor in Leprosy	a	a		•	
	Bureau of Health Professions					
	Hazardous Materials in the Environment: Workforce Competency	—	***9,993***			•
	Hazardous Materials Training for Environmental Health Practitioners	—	***22,204***			•

(table continues)

6. Toxic Agent and Radiation Control (Continued)

(Footnotes are on page 106)

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
	Indian Health Service					
	Study of Epidemiology, National History, and Control of Trachoma in Tunisia (With the Office of International Health, OASH)	$ a	$ a		•	
National Institutes of Health	**National Institute of Child Health and Human Development**					
	Congenital Malformations	2,229,000	2,845,000		•	
	Reproductive Medicine	218,000	750,000		•	
	Mental Retardation	1,142,000	860,000		•	
	High Risk Pregnancy	76,000	85,000		•	
	Fetal Pathology	96,000	221,000		•	
	Disorders of the Newborn	—	390,000		•	
	Division of Research Resources					
	Toxic Agent Control Research	1,059,000	925,000		•	
	National Cancer Institute					
	Development of Improved Tests to Predict Carcinogenicity	2,715,000	3,030,000		•	
	Coordination and Support to Other Federal Agencies	5,201,000	5,804,000		•	
	The Chemical and Physical Carcinogenesis Research Program	12,050,000	13,447,000		•	
	National Institute of Environmental Health Sciences					
	Characterization of Environmental Health Hazards	16,690,000	19,588,000		•	
	Biological Response to Environmental Health Hazards	37,050,000	40,500,000		•	

6. Toxic Agent and Radiation Control (Continued)

(Footnotes are on page 106)

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
	Applied Toxicological Research and Testing	$ 64,439,000	$ 70,519,000		•	
	Biometry and Risk Estimation	10,968,000	11,141,000		•	
	Resource and Manpower	9,650,000	9,887,000	•		
Office of the Assistant Secretary for Health	**Office of Disease Prevention and Health Promotion**					
	Task Force Report on Health Risk Assessment	e	8,00₌		•	

(table continues,

7. Occupational Safety and Health

1983 Total $72,894,519
1984 Total $92,722,182

(Footnotes *are on* page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Centers for Disease Control	**National Institute for Occupational Safety and Health**					
	Research (Epidemiology, Surveillance, Field Studies, Health Hazard Evaluations)	$ 40,545,000	$ 54,740,000	•	•	
	Professional Development and Training	5,760,000	8,760,000			
	Scientific and Technical Services	2,179,000	2,372,000	•		
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Health Protection, Primary and Secondary Prevention, and Health Promotion, Including Direct and Consultative Activities	13,529,000	15, 124,000	•		
	Bureau of Health Professions					
	Occupational Heaiiii Ciinicai Nurse Specialist	92,797	264,149			
	Grant for Continuing Education to Prepare Nurses in Health Assessment and Environmental Surveillance, in Occupational Health, and in Nontraditional Settings Such as Home, Schools, Recreational, and Other Community Sites	53,222	49,333	•	•	
National Institutes of Health	**Division of Research Resources**					
	Occupational Safety and Health Rcscarch	111,000	123,000		•	
	National Cancer Institute					
	Educational Programs to Reduce Work-Related Cancers	3,394,000	2,886,000	•		
	Program to Reduce Radiation Exposure	100,000	224.000	•		
	Studies to Evaluate Cancer Risk Among Workers	3,595,000	4,564,000		•	
	Occupational Safety and Health Facility Design and Consultation	900,000	567,000	•		

7. Occupational Safety and Health (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	National Heart, Lung, and Blood Institute					
	Occupational and Immunologic Diseases	$ 2,591,000	$ 2,600,000		•	
Office of the Assistant Secretary for Health	**Office of Disease Prevention and Health Promotion**					
	Cosponsorship With Washington Business Group on Health Meetings With Industries to Foster Introduction and/or Strengthening of Evaluation in Employee Health Promotion Programs	e	*e*		•	
	Evaluation of a Federal Occupationally Based Health Promotion Program	e	*e*		•	
	Development of Guidelines for Health Education and Health Promotion Programs in Occupational Settings	1,000	*8,000*	•	•	•
	Development of a Set of Common Data Items for Comparative Evaluation of Worksite Health Promotion Programs	e	*e*	•	•	
	Cooperative Agreement With Washington Business Group on Health to Stimulate Health Promotion Activities at Worksites	40,000	*69,700*	•		
	National Survey on Worksite Health Promotion Activities	—	*275,000*		•	
	Workshop on Health Promotion Program for Worksite Coalition	3,500	11,000	•		
	Activities to Prepare for a National Conference on the Future of Work and Health	—	*35,000*		•	
	Cooperative Agreement on Worksite Health Promotion Efforts	—	*50.000*	•		

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8. Accident Prevention and Injury Control

1983 **Total $7,704,250**
1984 **Total $9,094,736**

(Footnotes are on page 106)

		1983 *Resources*	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Environmental Health**					
	Injury Control Activities	$ 205,000	$ ***630,000***	•	•	
	Center for Health Promotion and Education					
	Behavioral Risk Factor Surveillance		***50,000***	•	•	
	Other Program Offices					
	Preventive Health and Health Services Block Grant	i	i	·	•	
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Maternal and Child Health Services Block Grant	300,000'	***300,000'***	•		
	Indian Health Services					
	Clinical Services and Preventive Health	4,000,000	4,000,000	.		
National Institutes of Health	**Division of Research Resources**					
	Accident Prevention and Injury Control Research	32,000	***14,000***		•	
	National Institute on Aging					
	Osteoporosis, Falls, and Fractures in the Elderly	1,294,000	2,489,000		•	
	National Eye Institute					
	Prevention of Visual Impairment From Cornea1 Burns and Ulcers	1,733,000	1,302,000		•	
Office of the Assistant Secretary for Health	**National Center for Health Services Research and Health Care Technology Assessment**					
	Etiology of Patient Slip/Fall Incidents in Hospitals	—	***125,695***		•	
	Improved Measurement of Severity and Predicting Outcome for Patients Subjected to Head Injuries	—	***184,041***		•	
Office of Human Development Services	**Administration on Aging**					
	Senior Citizens Fire Safety Education	140,250	—	·		

9. Fluoridation and Dental Health

1983 Total $19,250,861
1984 Total $32,463,761

(Footnotes are on page 106)

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Prevention Services**					
	Technical Assistance	$ 1,100,000	$ 500,000	•	•	
	Other Program Offices					
	Preventive Health and Health Services Block Grant	i	i		•	
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Health Services Dental Health Curriculum	—	75,000	•		
	Dental Sealant Demonstration Project	—	100,000	•		
	Prevention Services for Community Health and Migrant Health Centers	—	8,100,000			
	Indian Health Service					
	Clinical Preventive Services	—	3,661,000	•		
	Program Management	—	*240,000*	•		
	Education Courses in Prevention	—	*157,000*			•
	Prevention R&D	—	*50,000*		•	
National Institutes of Health	**Division of Research Resources**					
	Fluoridation Research	57,000	42,000		•	
	National Institute of Dental Research					
	Caries and Restorative Materials	10,909,000	11,125,000		•	
	Periodontal and Soft Tissue Diseases	4,285,000	5,301,000		•	
	Craniofacial Anomalies, Pain Control, and Behavioral Research	2,558,000	2,675,000		•	

(table continues)

9. Fluoridation and Dental Health (Continued)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Office of the Assistant Secretary for Health	**National Center for Health Services Research and Health Care Technology Assessment**					
	Efficacy Studies of Dental Radiographic Examinations	304,980	236,602		•	
	Cost-Effectiveness Analysis of Dental X-rays	36,881	—		•	
	Explaining Dental Utilization Behavior	—	179,559		•	
	Cost-Effectiveness of Periodontal Disease Control	—	21,600		•	

10. Surveillance and Control of Infectious Diseases

1983 Total $185,064,940
1984 Total $242,850,105

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Centers for Disease Control	**Center for Infectious Diseases**					
	Infectious Disease Investigations, Surveillance, Control and Laboratory Services	$ 18,997,940	$ 80,631,105	•	•	
	Center for Prevention Services					
	Tuberculosis	5 ,000,000	5,000,000	•		
	Other Program Offices					
	Preventive Health and Health Services Block Grant		i	·	•	
Food and Drug Administration	**Center for Drugs and Biologics**					
	Blood and Blood Products	4,23 1,000	4,784,000	•		
	Viral and Rickettsial Products	1,940,000	2,034,000	•		
	Bacterial and Allergenic Products	1,913,000	2,025,000	•		
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Migrant Program: Sanitation	280,000	200,000	•	•	
	Indian Health Services					
	Preventive Health and Clinical Services	130,000,000	125,000,000	•		
National Institutes of Health	**Division of Research Resources**					
	Infectious Agent Control Research	992,000	1,383,000		•	
	Fogarty International Center					
	Studies on Vectors and Agents of Infectious Diseases	2,722,000	2,893,000		•	

(table continues)

10. Surveillance and Control of Infectious Diseases (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
National Cancer Institute					
Biological Carcinogenesis	$ 1,100,000	$ 1,220,000		•	
National Heart, Lung, and Blood Institute					
Safety of Blood Therapy	145,000	***300,000***		•	
National Institute on Aging					
Effect of Aging on Immunity to Herpes Zoster	68,000	***74,000***			
Viral Respiratory Infections	76,000	—		•	
Urinary Tract Infections in the Elderly	195,000	***262,000***		•	
National Eye Institute					
Prevention of Ureitis and Other Ocular Inflammations Through Research on Immune Mechanisms	5,172,000	4,154,000		•	
Prevention of Recurrent Cornea1 Infections From Simplex Virus	2,118,000	1,752,000		•	
National Institute of Allergy and Infectious Diseases					
Prevention of Vector Transmitted Diseases	10,115,000	11,138,000		•	

11. Smoking Control

1983 Total $12,719,511
1984 Total $21,398,850

(Footnotes are on page 106)

Public Health Service

Alcohol, Drug Abuse, and Mental Health Administration

	1983 Resources	*I984 Resources*	*Services*	*Research*	*Health Professions Development*
National Institute on Drug Abuse					
Genetic of Nicotine Tolerance: Role of Receptors	$ 95,072	$ 120,132		•	
Studies on the Opiate and Nicotine Receptors	98,359	108,239		•	
Tobacco Tolerance and Dependence	79,677	96,641		•	
Topographical Analysis of Smoking Behavior	135,275	158,408		•	
Maintaining Non-Smoking	127,822	135,600		•	
Scaling the Reinforcement Value of Cigarette Smoking	74,427	96,682		•	
Acute and Chronic Nicotine on Brain Amine Release	95,394	92,295		•	
Nicotine Withdrawal and Smoking Treatment Outcome	88,057	140,530		•	
Pharmacokinetics and Pharmacodynamics of Nicotine	128,672	149,214		•	
"Addict" Smokers and Cessation with Nicotine Gum	40,657	—		•	
Relapse Prevention With Cigarette Smokers	97,056	—		•	
Attitude and Behavior Changes in Smoking Cessation	63,270	—		•	
Analysis of Cigarette and Coffee Use Interactions	114,963	—		•	
Behavioral Actions of Nicotine and Abused Substances	129,882	152,576		•	
Biological Basis of Compulsive Smoking Behavior	73,008	—		•	
Prevention of Smoking and Drug Use in School Children	51,227	—		•	
A Value Approach to Reducing and Preventing Smoking	43,289	—		•	
Cigarette Smoking and Public Policy	43,092	44,162		•	
Smoking Intervention Program for Children	—	150,881		•	
Adolescent Chewing Tobacco Use and Smoking Prevention	—	214,863		•	
Behavioral Methods for Cigarette Smoking Reduction	—	88,458		•	
Smoking Motives: Basis for Prevention/Quitting Strategies	—	43,096		•	

(table continues)

11. Smoking control (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	Preventive Drug Abuse Relapse: Smoking as a Prototype	$ —	$ 176,744		•	
	Clean Indoor Air Laws and Male/Female Smoking Differences	—	55,157		•	
	Office of the Administrator					
	Alcohol, and Drug Abuse and Mental Health Services Block Grant		i	.		
Centers for Disease Control	**Center for Health Promotion and Education**					
	Behavioral Risk Factor Surveillance	—	50,000	•		
	Other Program Offices					
	Preventive Health and Health Services Block Grant		i	.	•	
National Institutes of Health	**Division of Research Resources**					
	Smoking and Health Research	207,000	522,000		•	
	National Cancer Institute					
	Smoking Education and Information	2,441,000	8,753,000	•	•	
	Identification of Harmful Constituents in Tobacco Smoke	1,934,000	2,061,000		•	
	Epidemiology to Assess Smoking Risks	412.000	439,000		•	
	National Heart, Lung, and Blood Institute					
	Smoking Cessation	772,000	800,000	•	•	
	Smoking Prevention, Wellness Promotion	818,000	900,000	•	•	
	Smoking and Heart Health	620,000	900,000		•	

11. Smoking Control (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
National Institute of Child Health and Human Development					
Reproductive Medicine	$ 103,000	$			
Behavioral Pediatrics	1,072,000	*621,000*			
Fetal Pathology	737,000	*997,000*			
High Risk Pregnancy	—	*59,000*			
Office of the Assistant Secretary for Health					
National Center for Health Services Research and Health Care Technology Assessment					
Contributing Factors to Reduced Smoking Among Pregnant Adolescents	129,312	*125,172*			
Office of Disease Prevention and Health Promotion					
Developing Guidelines for Worksite Anti-Smoking Activities		*e*	•		
Office on Smoking and Health					
Development of a National Information and Education Program	700,000	*950,000*	•		
Technical Information Services-Inquiry and Reference, Photocopy, Computer Search and Retrieval Services-and Production and Distribution of Publications	800,000	*825,000*	•		
Development of the Surgeon General's Report on the Health Consequences of Smoking	**295,000**	*234,000*			
Adult Prevalence, Knowledge, Attitude, and Belief Surveys and Analyses	—	1,064,000			
Statewide Risk Factor Surveillance System	100,000	*75,000*	•		

(table continues)

12. Alcohol and Drug Misuse Prevention

1983 Total $118,086,621
1984 Total $126,545,239

(Footnotes are on page 106)

Public Health Service

Alcohol, Drug Abuse, and Mental Health Administration

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
National Institute on Alcohol Abuse and Alcoholism					
Early Intervention	$ 206,000	$ 916,000		•	
Risk Precursors and High-Risk Groups	157,000	544,000		•	
Health Promotion as a Prevention Modality	354,000	592,000		•	
Influence of Law and Policy	69 1,000	725,000		•	
Other Prevention Research	369,000	702,000		•	
Training in Prevention Research	19,000	96,000		•	
Public Education Campaign		500,000		f	
Clearinghouse Prevention Activities	400,000	449,000		f	
National Institute on Drug Abuse					
Evaluation of Abuse Potential	657,027	674,837		·	
Abuse Liability Studies	551,000	600,000		·	
Tailoring Drug Abuse Prevention to the School Setting	85,661	89,653		·	
Drug Abuse and Traumatic Stress	78,986	78,740		·	
Substance Use in Hyperactive Boys as Adolescents	58,462	—		·	
A Barrio Drug Abuse Prevention Program	186,918	—		·	
An Evaluation of Project Pride's Prevention Strategy	252,082	—		•	
Abusable Substances Medicines and Children Grades K-6	128,880	133,549		·	
Adolescent Drug Abuse: A Social-Cognitive Approach	144,482	144,798		·	
The Role of the Father in His Daughter's Drug Use	101,038	29,437		·	
Evaluation of A Model, K-12, Drug Education Project	182,198	—		·	
Family Functioning and Adolescent Substance Use	125,338	141,780		·	
Family Effectiveness Training	264,368	—		·	

12. Alcohol and Drug Misuse Prevention (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	Factors Inhibiting Drug Use: Teacher and Peer Effects	$ 118,199	$ 156,029		•	
	Drug Abuse, Stress, and Adaptation in Old People	221,672	*204,660*		•	
	Childhood Etiologic Determinants of Adolescent Drug Use	114,072	—		•	
	Developmental Approach to Adolescent Smoking Prevention	165,812	195,085		•	
	Prevention Services/Children of Substance-Abusing Parents	139,382	93,276		•	
	Prevention of Multi-Substance Abuse in Youth	516,914	492,690		•	
	Early Intervention for High Risk Adolescent	184,226	174,018		•	
	Etiology and Consequences of Adolescent Drug Use	39,528	52,704		•	
	Prevention and Early Intervention with Indian Teenagers	—	194,358		•	
	Abuse Liability of Sedative and Stimulant Drugs	—	190,350		•	
	Pyramid Workshops	593,844	856,104		f	
	Clearinghouse Activities	564,156	824,896		f	
	Office of the Administrator					
	Alcohol, and Drug Abuse and Mental Health Services Block Grant		i	•		
Centers for Disease Control	**Center for Health Promotion and Education**					
	Behavioral Risk Factor Surveillance	—	50,000	•	.	
	Other Program Offices					
	Preventive Health and Health Services Block Grant	i	i	•	.	
Food and Drug Administration	**Center for Drugs and Biologics**					
	Prescription Drug Labeling and Advertising	2,080,000	1,693,000	•		

(table continues)

12. Alcohol and Drug Misuse Prevention (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
Drugs and Biologics: Bio-Research Monitoring	$ 8284,000	$ 8,148,000	•		
Biopharmaceutics	4,971,000	4,436,000	•		
Drug Quality Assurance	31,920,000	31,395,000	•		
New Drug Evaluation	20,757,000	23,339,000	•		
Generic Drug Evaluation	5,290,000	6,071,000	•		
Drug Experience and Trend Analysis	3,369,000	5,102,000	•		
OTC (Over the Counter) Drug Evaluation	4,750,000	5,087,000	•		
Generic Drug Standards	4,340,000	5,068,000	•		
Health Resources and Services Administration					
Bureau of Health Professions					
Area Health Education Center Program	471,818	***349,875***			•
Family Medicine Residency Training	3 1,246				•
Primary Care Residency Training	1,563	—			•
Family Medicine Department	38,100	—			•
Family Medicine Training	—	***60,610***			•
Personal Services Contract With the Society of Teachers of Family Medicine to Develop Monograph, "Family Medicine Curriculum Guide to Substance Abuse"	7,000	b		•	
Physician Assistants Grant Training		***3,500***			•
Teenage Alcoholism Modules for the Education of Medical Students, Residents, and Practicing Physicians	252,649	—		•	
Grant for Self-Management Training for Acknowledged Alcoholics Who Have Completed Detoxification and Rehabilitation Programs	—	***30.772***	•	•	•
Indian Health Service					
Clinical Services	21,207,000	22,889,800	•		

12. Alcohol and Drug Misuse Prevention (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
National Institutes of Health	**Division of Research Resources**					
	General Research in Alcohol/Drug Misuse	$ 697,000	$ *448,000*		•	
	National Cancer Institute					
	Epidemiological Studies	57,000	*60,000*		•	
	National Institute on Aging					
	Programs to Reduce the Inappropriate Use of Drugs in the Elderly	420,000	*900,000*		•	
	National Institute of Child Health and Human Development					
	Congenital Malformations	842,000	*667,000*		•	
	Mental Retardation	25 1,000	*118,000*		•	
	High-Risk Pregnancy	15,000	—		•	
	Fetal Pathology	364,000	*468,000*		•	
	Behavior Pediatrics	—	*86,000*		•	
Office of the Assistant Secretary for Health	**National Center for Health Services Research and Health Care Technology Assessment**					
	Develop and Test New Methodologies for Post-Marketing Surveillance of the Risks and Benefits of Prescription Drugs	—	*123,718*		•	
	Office of Disease Prevention and Health Promotion					
	As Part of a Public Education Campaign for Health Promotion for the Elderly, Information on Appropriate Use of Drugs is Included	e	*e*	•		

(table continues)

12 Alcohol and Drug Misuse Prevention

		1983 Resources		*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Office of Human Development Services	**Office of Policy and Legislation**						
	Social Services Block Grant	i		i	•		
	Administration on Aging						
	Day Treatment for Chemically Dependent Adults		—	00,000	•		
Office of Community Services	**Office of Special Projects Assistance**						
	Community Services Block Grant	i		i	•		

13. Improved Nutrition

1983 Total $552,460,089
1984 Total $575,382,246

(Footnotes are on page 106)

		1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Health Promotion and Education**					
	Nutrition Surveillance and Epidemiology	$ 1,599,870	$ 1,598,600	•	•	
	Behavioral Risk Factor Surveillance	—	50,000	•		
Food and Drug Administration	**Center for Food Safety and Applied Nutrition**					
	Nutrition	8,368,000	9,058,000	•		
	Food Sanitation	45,164,000	47,164,000	•		
	Food and Economics	2,554,000	3,686,000	•		
Health Resources and Services Administration	**Bureau of Health Care Delivery and Assistance**					
	Enhance General Physical and Emotional Well-Being—Reduce the Incidence of Disorders Related to Malnutrition (Maternal and Child Health Services Block Grant)		i	.		
	Bureau of Health Professions					
	Area Health Education Center Program	932,917	*604,486*	•		
	Primary Care Residency Training	25,918	*28,480*			•
	Physician Assistant Training	2,000	*8,445*			•
	Family Medicine Residency Training	136,574	*201,695*			•
	Health Promotion Nutritional Care Independent Study Packages for Family Medicine Residents	146,009	—			•
	Nutrition Training in Schools of Public Health	—	19,840			•
	Indian Health Service					
	Clinical Services and Preventive Health	2,200,000	2,500,000	•		

(table continues)

13. Improved Nutrition (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
Interoffice Programs					
Nutrition Education and Counseling in Primary Care Programs (IHS and BHCDA)	$ b	$ b	•		
National Institutes of Health					
Division of Research Resources					
Improved Nutrition Research	13,949,000	11,234,000		•	
National Cancer Institute					
Nutritional Factors and the Prevention of Cancer	1,802,000	3,169,000		•	
Studies Focusing on Etiologic Factors Related to Nutrition	8,407,000	11,116,000		•	
National Eye Institute					
Prevention and Control of Eye Diseases Related to Nutritional Deficiencies	531,000	1,003,000		•	
Fogarty International Center					
Improved Nutrition Research	247,000	263,000		•	
National Heart, Lung, and Blood Institute					
Plans for National Cholesterol Education Program	200,000	200,000		•	
Lipid Research Clinics Coronary Primary Prevention Trial, Nutrition Education for Participants and Families	1,900,000	1,900,000	•	•	
Community Intervention Programs	2,200,000	2,400,000	•	•	
Multiple Risk Factors	467,000	300,000		•	
Other Nutrition Programs	454,000	700,000	•	•	

13. Improved Nutrition (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	National Institute of Child Health and Human Development					
	Nutrition Research	$ 10,401,000	$ 11,591,000		•	
	National Institute on Aging					
	Nutrition Research and Prevention	1,499,000	1,394,000		•	
	Enhance General Physical and Emotional Well-Being/Reduce the Incidence of Disorders Related to Malnutrition	564,000	1,153,000		•	
	National Institute of Arthritis, Diabetes, Digestive, and Kidney Diseases					
	Nutrition Research	6,081,000	15,800,000		•	
	National Institute of Neurological and Communicative Disorders and Stroke					
	Enhance General Physical and Emotional Well-Being/Reduce the Incidence of Disorders Related to Malnutrition	216,000	875,000		•	
Office of the Assistant Secretary for Health	**National Center for Health Services Research and Health Care Technology Assessment**					
	Increasing Compliance with Diet Regimens for Insulin-independent Diabetic Patients	77,801	—		•	
	Office of Disease Prevention and Health Promotion					
	Publication of Annual Nutrition Activities Report	4,000	e	•	•	
	Chairmanship of the DHHS Nutrition Policy Board	e	e	•	•	

(table continues)

13. Improved Nutrition (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	Nutrition Symposium For National Nutrition Month	$ 3,000	$ *4,000*	•	•	•
	Reprint of Dietary Guidelines in Spanish and English	—	*20,000*	•		
	Committee to Review Dietary Guidelines	—	*12,700*		•	
Office of Community Services	**Office of Special Projects Assistance**					
	Community Services Block Grant		i	·		
Office of Human Development Services	**Administration for Children, Youth, and Families**					
	Head Start Nutrition Program	35,000,000	60,000,000	•		
	Administration on Aging					
	Nutrition Programs (Title III-C)	383,600,000	383,600,000	•		
	Nutrition Programs (Title VI)	3,728,000	3,728,000	•		
	Office of Policy and Legislation					
	Social Services Block Grant		i	·		

14. Physical Fitness and Exercise

1983 Total $9,669,660
1984 Total $10,25 1,034

(Footnotes are on page 106)

		1983 *Resources*	1984 *Resources*	*Services*	*Research*	*Health Professions Development*
Public Health Service						
Centers for Disease Control	**Center for Health Promotion and Education**					
	Behavioral Risk Factor Surveillance	$ —	*$ 50,000*	•	•	
Health Resources and Services Administration	**Bureau of Health Professions**					
	Research Grant: Effects of Preventicare Exercise on Elders	144,660	140,214		•	
	The Relationship of Walking to Well-Being in the Elderly	—	41,820		•	
National Institutes of Health	**Division of Research Resources**					
	Exercise and Fitness Research	661,000	1,240,000		•	
	National Heart, Lung, and Blood Institute					
	Exercise and Pulmonary Disease	50,000	50,000		•	
	Exercise, Risk Reduction, and Heart Disease	978,000	950,000		•	
	National Institute on Aging					
	Exercise and Aging: Exercise and Normal Aging Changes	577,000	558,000		•	
	Prevention of Loss of Body Function	566,000	450,000		•	
Office of the Assistant Secretary for Health	**Office of Disease Prevention and Health Promotion**					
	National Children and Youth Fitness Study	84,000	94,000			•
	Publication of a Series of Reports on Physical Fitness Issues	—	2,000		•	

(table continues)

14. Physical Fitness and Exercise (Continued)

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
	President's Council on Physical Fitness and Sports					
	Technical Assistance: Public and Private Agencies and Organizations, Information Evaluation and Dissemination, Library Resources, and Governors' Councils	$ 242.000	$ 268,000	•	•	•
	Public Awareness: Instructional Materials for Schools, National Media Campaigns, Surveys, Presidential Physical Fitness Award, and Leadership Training	296,000	302,000	•		•
	Symposia/Conferences/Clinics	3 1,000	*43,000*	.		•
	Program Development	280,000	*302.000*	•	•	•
Office of Community Services	**Office of Special Projects Assistance**					
	Community Services Block Grant (National Youth Sports Program-Comprehensive Developmental and Institutional Sports Program of 132 NCAA Member Colleges and Universities for 56,000 Low-Income Youth)	5,760,000[i]	5,760,000[i]	•		•

15. Control of Stress and Violent Behavior

1983 Total $6,691,530
1984 Total $9,483,797

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Alcohol, Drug Abuse, and Mental Health Administration	**National Institute of Mental Health**					
	Disaster, Trauma, and Violent Behavior	$ 1,220,000	$ 1,558,000		•	
	Stress	817,000	1,043,000		•	
	Marital Disruption	548,000	700,000		•	
	Office of the Administrator					
	Alcohol, and Drug Abuse and Mental Health Services Block Grant	i	i	•		
Centers for Disease Control	**Center for Health Promotion and Education**					
	Violence Epidemiology	152,350	325,000			
Health Resources and Services Administration	**Bureau of Health Professions**					
	Research Grants:				•	
	Effects of Family Nursing on Sibling Response to Dying	121,905	154,522			
	Type A Behavior: An Epidemiologic Study of Twin Families	—	61,500		•	
	Comparing Parent Training Models for Antisocial Children	—	167,142		•	
National Institutes of Health	**Division of Research Resources**					
	General Research in Stress Control	963,000	1,165,000		•	
	National Heart, Lung, and Blood Institute					
	Changes in Health Behavior	1,459,000	1,700,000	•		
	Type A-B Behavior in Patients	413,000	500,000		•	

(table continues)

15. Control of Stress and Violent Behavior (Continued)

(Footnotes are on page 106)

		1983 *Resources*	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
	National Institute on Aging					
	Coping With Grief Bereavement in the Elderly	*$* 386,000	$ *311,000*		•	
	Effects of Stress and Coping on the Physical and Emotional Well-Being of the Elderly	583,000	1,670,000		•	
Office of the Assistant Secretary for Health	**National Center for Health Services Research and Health Care Technology Assessment**					
	Sources of Caregiver Strain in Long-Term Home Care	28,275	—		•	
	Office of Disease Prevention and Health Promotion					
	National Assessment of Stress in the U.S. Population	[e]	*21*,700[h]		•	
Office of Human Development Services	**Office of Policy and Legislation**					
	Social Services Block Grant		[i]	•		
	Administration on Aging					
	Strengthening Informed Caregiver Effectiveness Through Stress Reduction Counseling	—	106,933	•		

16. Cross-Cutting and Other

1983 Total $1,421,363,321
1984 Total $1,461,801,520

(Footnotes are on page 106)

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Public Health Service						
Alcohol, Drug Abuse, and Mental Health Administration	**National institute of Mental Health**					
	Children of Disturbed Parents	$ 488,000	$ 623,000		•	
	High-Risk Infants and Children	1,839,000	2,348,000		•	
	Other Special Populations	480,000	613,000		•	
	Work and Mental Health	660,000	843,000		•	
	Depression and Suicide	587,000	749,000		•	
	Health Promotion, Coping, and Skills Training	1,27 1,000	1,623,000		•	
	Office of the Administrator					
	Alcohol, and Drug Abuse and Mental Health Services Block Grant	45,136,000[i,j]	39,867,000[i,j]	•		
Centers for Disease Control	**Center for Health Promotion and Education**					
	Health Education/Risk Reduction Activities	1,348,440	1,588,600	•	•	
	Center for Prevention Services					
	Diabetes Control Demonstration Projects	5,980,000	5,980,000	•		
	Grants for Health Assessments	3,894,000	5,810,000	•		
	Overseas Monitoring and Screening	2,000,000	2,000,000	•		
	Program Operations	515,000	938,000	•		
	Center for Professional Development and Training					
	Public Health Training, Consultation, and Technical Assistance	3,105,500	3,105,500	•	•	
	Laboratory Program Office					
	Clinical Laboratory Training, Analyses, and Testing Activities	5,300,000	5,700,000	•		

(take continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

		1983 *Resources*	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
	Other Program Offices					
	Epidemic Investigations, Surveillance, and Analysis	$ 7,300,089	$ 8,002,520	•	•	
	Preventive Health and Health Services Block Grant (Includes $3,000,000 for Rape Services and Prevention)	85,300,000	87,136,000	•	•	
Food and Drug Administration	**Center for Veterinary Medicine**					
	Animal Feed Safety	7,546,000	8,113,000	.		
	New Animal Drug Evaluation	5,255,000	5,055,000	•		
	Monitoring Marketed Animal Drugs and Devices	3,423,000	4,054,000	•		
	Safety of Animal-Derived Human Foods	4,467,000	5,173,000	•		
	Animal Drugs: Bio-Research Monitoring	1,043,000	1,028,000	•		
	Center for Devices and Radiological Products					
	Medical and Radiological Device-Monitoring and Quality Conformance	31, 190,000	29,202,000	.	•	
	Medical and Radiological Device-Product Evaluation	14,242,000	13,423,000	•	•	
	Medical and Radiological Device-Bioeffects Analysis, Test & Measurement Development	9,089,000	11,075,000	•	•	
	Medical and Radiological Device-Education and Assistance	7,510,000	8,868,000	•	•	
	Center for Drugs and Biologics					
	Orphan Drugs	1,220,000	2,680,000	•	•	
	Program Management	49,683,000	50,206,000	•		
	Buildings and Facilities	—	4,495,000	•		

16. Cross-Cutting and Other (Continued)

(Footnotes are **on** *page 106)*

Health Resources and Services Administration

	1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Bureau of Health Care Delivery and Assistance					
Community Health Centers/Dental	***$*** 2,500,000	***$*** 2,300,000	•		
Migrant Health/Dental	***650,000***	***710,000***	•		
Maternal and Child Health Services Block Grant	432,700,000[i,k]	398,953,700[i,k]	•		
National Health Services Corps/Dental	1,770,000	1 ,soo,ooo	•		
Bureau of Health Professions					
Research Grants:					
Health Awareness Program Conducted by School Nurses	***23,358***	—		•	
A Study of School Nurses' Use of Project Health Participatory and Assertive Consumer Training (P.A.C.T.)	160,831	190,995		•	
Expanding Nursing Role in Weight Control Counseling	—	52,691		•	
Variables Related to Self Breast Examination in Older Women	—	52,947		•	
Public Health Capitation Grants	4,176,000	4,838,000			
Public Health Traineeship Grants	2,500,000	2,569,000			
Series of Five Workshops to Assess the Impact of Health Promotion and Disease Prevention Objectives on Health Professions Education	141,417	—		•	
Allied Health Special Education Initiatives with Focus on Health Promotion and Disease Prevention	875,656	***908,549***			
Geriatric Education Centers Which Include Health Promotion and Disease Prevention Activities for the Elderly	871,734	957,972			
Environmental Health Activities:					
Family Medicine Residency Training	133,803	118,075			

(table continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
Area Health Education Center	$ 46,140	$ *27,617*			•
Patient Education:					
Family Medicine Residency Training	131,464	—			•
Health Promotion/Disease Prevention Activities:					
Area Health Education Center	241,940	*80,072*			•
Preventive Medicine Residency Training	1,000,000	1,600,000			•
Physician Assistant Training	780	*7,200*			•
Family Medicine Departments	128,488	—			•
Family Medicine Predoctoral Training	2,415	134,051			•
Family Medicine Residency Training	198,346	—			•
Primary Care Residency Training	32,567	—			•
Preventive Health Care in Obstetrics/Gynecology Residency Training	—	*40,613*		•	
Preventive Medicine Residency Data	980	—		•	
Preventive Health Care Training in Pediatrics Residency Programs	9,750	—			•
Preventive Health Care Training in General Internal Medicine Residency Program	8,705				•
Preventive Health Care Training in Family Medicine Residency Programs	4,911				•
Preventive Health Care Training in OB/GYN Residency Programs	8,615	*40,613*			•
A Model Joint Family Medicine/Preventive Medicine Clerkship	150,000	150,000			•
Nursing Special Project Grants:					
Self-Management Training for Children/Adolescents With Asthma, Arthritis, Migraine Headaches, Dysmenorrhea, and Dermatitis		*30,112*	•	•	•

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
Self-Management Training for Persons With Chronic Minor Depressions Which Receive Inadequate Attention by Existing Health Care Channels	$ —	$ 30,772	•	•	•
Improving the Distribution of Community Health Nurses Who Are Prepared in Assessment and Health-Oriented Case Management of the Elderly	—	252,384	•	•	•
Increasing the Number of Community Health Nurses Who Have Knowledge and Skill to Provide a Broadened Scope of Practice to Handicapped Children and Their Families	175,819	—	•	•	•
Enriching the BSN Curriculum by Developing a Nursing Center for Family Health	69,661	—	•	•	•
Educational Program for Nurses to Increase Their Skills Related to Environmental Health	—	128,802			•
Development, Implementation, and Evaluation of a Nursing Center	111.110	66,666	•	•	•
Office of International Affairs					
Study of Health-Related Beliefs of Urban Egyptian Children with View Toward Developing Effective Health Education Programs (With the Office of International Health, OASH)	a	a		•	
"Know Your Body" School Education Project in Egypt	a	a		•	
Office of Planning, Evaluation, and Legislation					
Development of National Guidelines for Health Planning-component of Health Planning Goals Focuses on Disease Prevention and Health Promotion	d	d	•	•	

(table continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
Indian Health Service					
Primary Mental Health Counseling and Treatment Program	$ 8,571,000	$ 11,037,000	•		
Clinical Services/Dental	21,047,000	24,346,000	•		
Interoffice Programs					
Education in Primary Services (BCHS, BMS)	b	b	•		
Health Education and Counseling in All Primary Care Programs (BCHS, BMS, IHS)	b	b	•		
Coping/Stress Management: Primary Mental Health Counseling (BMS, IHS)	b	b	•		
National Institutes of Health					
Division of Research Resources					
General Research on Cross-Cutting issues	4,211,000	4,499,000		•	
Fogarty International Center					
General Research on Cross-Cutting Areas	988,000	1,052,000		•	
National Cancer Institute					
Cancer Centers Program	1,731,000	1,614,000		•	
Epidemiology to Identify Groups at High Risk of Cancer	30,939,000	33,562,000		•	
Training of Research Personnel	1,707,000	1,686,000			•
Studies of Radiation Exposure in Cancer	6,833,000	4,315,000		•	
Induction of Tumors in Non-Human Primates	1,126,000	1,222,000		•	
Development of Chemopreventive Agents	11,109,000	20,040,000		•	
Research Relating to Chemical and Physical Carcinogenesis, Tumor Promotion, and Chemoprevention	52,035,000	55,774,000	•	•	

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Organ Sites Program	$ 4,256,000	$ 5,382,000		•	
Screening, Early Detection, Diagnosis	12,377,000	21,866,000	•	•	
Biobehavioral Research	3,824,000	4,360,000		•	
Information/Education Programs	3,896,000	2,696,000			•
Immunology	2,101,000	—		•	
Acquired Immune Deficiency Syndrome	4,443,000	7,562,000	•	•	
Research Relating to Biological Carcinogenesis, Oncogenes, and Growth Factors	65,640,000	71,233,000		•	
National Eye Institute					
Prevention of Proliferative Diabetic Retinopathy	8,915,000	7,630,000		•	
Prevention of Blindness From Retinal Branch Vein Occlusion	785,000	637,000		•	
Development of New Drugs and Treatments Related to Prevention of Human Cataract	4,102,000	3,701,000		•	
Development of New Drugs and Treatments Related to Prevention of Glaucoma	1,950,000	1,575,000		•	
Prevention of Macular Diseases and Their Consequences	2,561,000	2,439,000		•	
Prevention of Diabetic Cataract	1,603,000	1,493,000		•	
Prevention of Toxic Effects of Drugs on the Eye	540,000	494,000		•	
Prevention of Nearsightedness and Other Refractive Errors	780,000	856,000		•	
Prevention of Hereditary and Developmental Degeneration of the Retina	4,320,000	4,748,000		•	
Identification of Risk Factors Related to the Prevention of Glaucoma	2,110,000	2,087,000		•	

(table continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
National Heart, Lung, and Blood Institute	$	$		•	
Hemophilia and Sickle Cell Disease Prevention Research	3,950,000	4,000,000	•	•	
Epidemiology of Cardiovascular Disease	4,500,000	5,000,000		•	
Community Programs for Cardiovascular Disease	8,500,000	9,000,000	•	•	
Intramural Research Program	1,890,000	2,100,000		•	
Other Prevention of Heart, Lung, or Blood Diseases	77,098,000	89,850,000	•	•	•
National Institute on Aging					
Alzheimer Disease Research	9,034,000	15,078,000		•	
Program to Reduce Functional Disability in the Elderly	2,849,000	4,046,000		•	
Other Aging Research	24,474,000	30,230,000		•	
National Institute of Allergy and Infectious Diseases					
Prevention of Allergic Diseases	7,543,000	9,564,000		•	
National Institute of Arthritis, Diabetes, Digestive, and Kidney Diseases					
Primary Prevention Research	103,067,000	101,489,000		•	
National Institute of General Medical Sciences					
Research to Prevent Chromosomal Abnormalities and General Genetic Diseases	695,067	701,415		•	
Pharmacological Sciences Research	240,000	341,244		•	
Anesthesiology Research	43,798	90,663		•	
Burn and Trauma Research	1,483,135	1,827,678		•	

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
National Institute of Neurological and Communicative Disorders and Stroke					
Communicative Disorders Program	$ 6,693,000	$ 7,594,000		•	
Convulsive, Developmental, and Neuromuscular Disorders Program	7,315,000	8,767,000		•	
Demyelinating, Atrophic, and Dementing Disorders Program	7,768,000	6,197,000		•	
Stroke and Trauma Program	9,783,000	10,170,000		•	
Fundamental Neurosciences Program	222,000	1,225,000		•	
Intramural Research Program	5,186,000	5,227,000		•	
National Institute of Child Health and Human Development					
Mental Retardation	16,130,000	16,311,000		•	
Behavioral Pediatrics	649,000	1,229,000		•	
Nutrition	2,012,000	2,066,000		•	
Congenital Malformations	1,139,000	849,000		•	
Neonatal Infection	1,758,000	1,732,000		•	
Epidemiology and Biometry	1,359,000	1,635,000		•	
Fetal Pathology	519,000	—		•	
Office of the Assistant Secretary for Health					
National Center for Health Services Research and Health Care Technology Assessment					
Assessment of Patient Responses to Shared Medical Records				•	
Analysis of the Ethical, Social, and Political Issues Raised by Governmental Efforts to Promote Health Behaviors				•	

(table continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Ser	Research	Health Professions Development
Physician Effectiveness in Preventive Care	$ e	$ e		•	
Evaluation of Preventive Medical Care as a Health Strategy	e	e		•	
Development of Improved National Estimates of Morbidity Costs for Specific Illnesses and Analysis of Economic Determinants	e	e		•	
Evaluation of the Effects of Choice and Predictability in Health Care Settings on Health Outcomes	161,178	—		•	
Incidence and Implications of Iatrogenic Disease in the Elderly	7,007	27,993		•	
Improved Management of Asthmatic Children by Families Using a Home Health Record	32,664	26,132		•	
Health Promotion and Disease Prevention for Children and the Elderly	34,750	—		•	
Trends and Determinants of Chronic Illnesses in Childhood	124,924	106,970		•	
Analysis of a Successful Strategy to Improve Physicians', Prescribing Habits	127,351	63,255		•	
Comparative Health Measures in Poor, Urban, Elderly Blacks	33,400	—		•	
Examine the Effects of Family Psychosocial Characteristics on the Use of Health Care Services for Children	23,713	—		•	
Assess the Effectiveness and Impact of a National Cancer Telephone Information Program	27,885	—		•	
Can Spouses of Cardiac Arrest Patients be Trained to Use an Automatic Home Defibrillator and Will It Increase Survival Incidences	102,701	105,474		•	
Investigate Whether Providing Physician Incentive and Skills Training Improves Patient Outcome	143,906	155,396		•	

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 *Resources*	1984 *Resources*	Service	Research	Health Professions Development
Childhood Lead Poisoning: Evaluating New Control Efforts	$ 28,733	$ —		•	
Methods to Improve the Quality of Physician Prescribing	96,240	—		•	
Effectiveness of a Pediatrician Educational Intervention to Improve Maternal Compliance	—	***202,493***		•	
Effectiveness of an Automated External Defibrillator in Comparison With Manual Defibrillation by Emergency Medical Technicians for Victims of Cardiac Arrest	—	***74.002***		•	
Evaluation of a Computer-Stored Ambulatory Care Record in a Community-Based Long-Term Care Program for a Group of Elderly Patients at High Risk of Re-Institutionalization	—	***157.889***		•	
The Effect of Medicaid and Community Health Center Programs on the Use of Preventive Services by Uninsured Poor People		21,600		•	
Use of Physician Services by Low Income Children With and Without Medicaid Coverage		21,306		•	
Study of Whether Increased Intensity at the Ambulatory Care Level Can Reduce Patient Morbidity, Incidence of Nonelective Hospital Readmissions, and Overall Costs of Health Care	—	106,159		•	
Quality of Life Factors in Geriatric Medicine Decisions	—	39,493		•	
National Center for Health Statistics					
National Survey of Personal Health Practices and Consequences	b	b		•	
Preparation and Publishing of the 1983 Prevention Profile	20,000	***33,000***		•	
Analysis and Publication of Vital Statistics Data	g	g		•	•

(table continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 *Resources*	*Services*	*Research*	*Health Professions Development*
National Survey of Family Growth	$ g	$ g		•	
National Natality Survey and National Fetal Mortality Survey	b	b		•	
NHANES I Epidemiologic Followup Survey	g	g		•	
National Health and Nutrition Examination Surveys II and III and National Hispanic Health and Nutrition Examination Survey	g	g		•	
1982, 1983, 1984, and 1985 National Health Interview Surveys	g	g		•	
1983 National Health Interview Survey-Alcohol and Health Practices Supplement	b	b		•	
1985 National Health Interview Survey-Health Practices/Disease Prevention Supplement	b	b		•	
Office of Disease Prevention and Health Promotion					
National Health Information Clearinghouse	412,000	529,000	•		
Technical Assistance to Community Health Promotion Programs	e	e	·		
National Health Promotion Media Campaign-Meeting to Define Ways to Use Broadcast Media to Promote Health	70,000[h]	255,000	•		
Meetings to Coordinate Studies of Health Risk Assessment	e	e	·		
Collaboration With Center for Health Promotion and Education on Evaluation of School Health Activities	e	e		•	
Preparation and Publishing of Biennial Report Entitled ***Prevention***	—	e			•

16. Cross-Cutting and Other

	1983 Resources	1984 Resources	Service	Research	Health Professions Development
Development of a Program to Establish a National Health Promotion Training Network With Private Sector Organizations	$ 162,000	$ 200,000	•		
Publication of Staying Healthy, a Bibliography of Health Promotion Materials	25,000	5,000			•
Publication of Implementation Plans for 1990 Objectives for the Nation	23,500	e			•
Development and Publishing of Monthly Prevention Calendars and Abstracts	4,000	4,000			•
Publication of "Thinking Well," Directed Toward School Age Children	1,400	—			•
Working Conference on School Health Education	5,000	2,000			•
Papers Dealing With the State-of-the-Art in Health Promotion in Various Settings	8,500	e		•	•
Support for Publications Relating to Health Promotion Areas Such as the Computers in Health Education	18,000	16,000			•
Variety of Activities to Promote Use of Preventive Health Services in Clinical Settings	5,000	107,200	•	•	•
Coordinating, Monitoring, and Tracking the 1990 Prevention Objectives	300,000[d]	367,500[d]	•	•	•
Intergovernmental Meeting on Health Promotion Through Schools	21,000	e			•
Conference of Leading Publishing House Editors for 1990 Prevention Objectives	e	23,500			•
Cooperative Agreement for Stimulating Health Promotion in the Schools	e	53,800		•	
Conference to Promote Use of 1990 Objectives by Private Sector Groups	e	43,000			•

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16. Cross-Cutting and Other (Continued)

*(Footnotes are **on page 106**)*

		1983 Resources	1984 Resources	Services	Research	Health Professions Development
Health Care Financing Administration	**Office of Special Programs**					
	Early and Periodic Screening, Diagnosis, and Treatment Program (EPSDT)	$ 70,000,000	$ 74,000,000	•		
	Office of Research, Demonstrations, and Statistics					
	Reimbursement Incentives, Health Promotion, and Alternative Setting Studies	*365,366*	*405,142*		•	
Office of Community Services	**Office of Special Projects Assistance**					
	Community Services Block Grant	i	i	•		
Office of Human Development Services	**Administration on Aging**					
	Demonstration Projects on Elderly Abuse (Title IV-C)	221,893	—	•	•	
	Administration on Aging/Public Health Services-Hip Fracture Initiative	—	50,000		•	
	Policy Study Center on Health	245,253	425,105		•	•
	Administration for Children, Youth, and Families					
	Meeting the Needs of Chronically Ill Children	50,000	—		•	
	Developing Family Networks for Parents of Retarded Children	50,000	—	•		
	Preventive Practices and Training of Volunteers in the Area of Family Stability	125,000	—		•	
	Parental and Family Involvement in Preventing and Treating Troubled Youth	50,000	—		•	
	Training Seminars on Advanced Family Counseling for Runaway Youth Grantees	150,000	—	•		
	Dissemination of Information on Child Abuse and Neglect	130,000	—	•		

(Footnotes are on page 106)

	1983 *Resources*	*1984 Resources*	*Services*	*Research*	*Health Professions Development*
Indian Child Welfare Resources Programs	$ 200,000	$ —	•		
Revisions to Head Start Policy Guidance on the Handling of Known or Suspected Child Abuse Cases (3 projects)	275,000	—		•	
Child Abuse and Neglect State Grants	6,700,000	6,720,000		•	
Projects Relating to the Upgrading of Child Protective Services (8 projects)	544,800	—		•	
Projects Dealing With Children and Families of Battered Wives (5 projects)	287,500	—	•		
Projects Dealing With Improving the Mental Health Services for Abused or Neglected Children and Adolescents (11 projects)	875,000	—	•		
Projects Dealing With the Diagnosis and Treatment of Developmentally Disabled Children Who Are Victims of Child Abuse and Neglect (3 projects)	214,500	—		•	
Projects Concerned With Working With Families to Prevent Child Abuse and Neglect	796,000	—		•	
National Runaway Switchboard-Information and Referral	350,000	350,000	•		
Support of Runaway Youth Facilities Through Regional Grants	17,054,530	15,800,000	•		
Using Performing Arts Techniques as a Tool in Child Development	—	200,000		•	
Using Performing Arts Techniques as a Tool in Development of Children With Special Needs	70,000	70,000		•	
National Resource Center for Family-Based Service to Prevent Unnecessary Out-of-Home Placement of Children	285,000	125,000	•		
National Center on Child Abuse and Neglect Clearinghouse	442,000	355,000	•		

(table continues)

16. Cross-Cutting and Other (Continued)

(Footnotes are on page 106)

	1983 Resources	1984 Resources	Services	Research	Health Professions Development
Office of Program Development					
Economic Self-Sufficiency for Rural Small Farms and Poor Land Through Intensive Agriculture	$ 196,189	$ —		•	
An Idea Whose Prime Time Has Come: The Use of Cable TV for Public Education on Social Problems	83,705	—	•		
Case Management Preventive Services Projects	162,000	—	•		
Stimulating the Development of Employer Sponsored Human Services Programs	60,631	—		•	
Reducing Dependency Through Economic Development	200,000	—		•	
Youth Services USA: Young Parenting Training and Counseling	—	150,000	•		
Involving Voluntary Organizations in Community Health Education for Aging	—	138,000	•		
Office of Policy and Legislation					
Social Services Block Grant	i	i	.		
Administration for Native Americans					
Development of Tribally Owned and Controlled Medical Dental Clinics and Services	50,523	—		•	

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Preventive Health Services

- Family Planning
- Pregnancy and Infant Health
- Immunization
- Sexually Transmitted Disease Control
- High Blood Pressure Control

Health Protection

- Toxic Agent and Radiation Control
- Occupational Safety and Health
- Accident Prevention and Injury Control
- Flouridation and Dental Health
- Surveillance and Control of Infectious Diseases

Health Promotion

- Smoking Control
- Alcohol and Drug Misuse Prevention
- Improved Nutrition
- Physical Fitness and Exercise
- Control of Stress and Violent Behavior